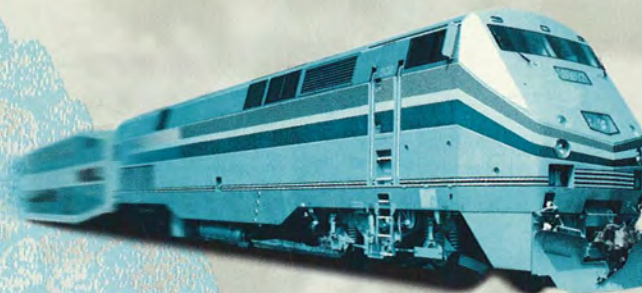




Sound Move

**Launching a Rapid Transit System
for the Puget Sound Region**

The Ten-Year Regional Transit System Plan



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Sound Move

**Launching a Rapid Transit System
for the Puget Sound Region**

The Ten-Year Regional Transit System Plan



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As adopted May 31, 1996

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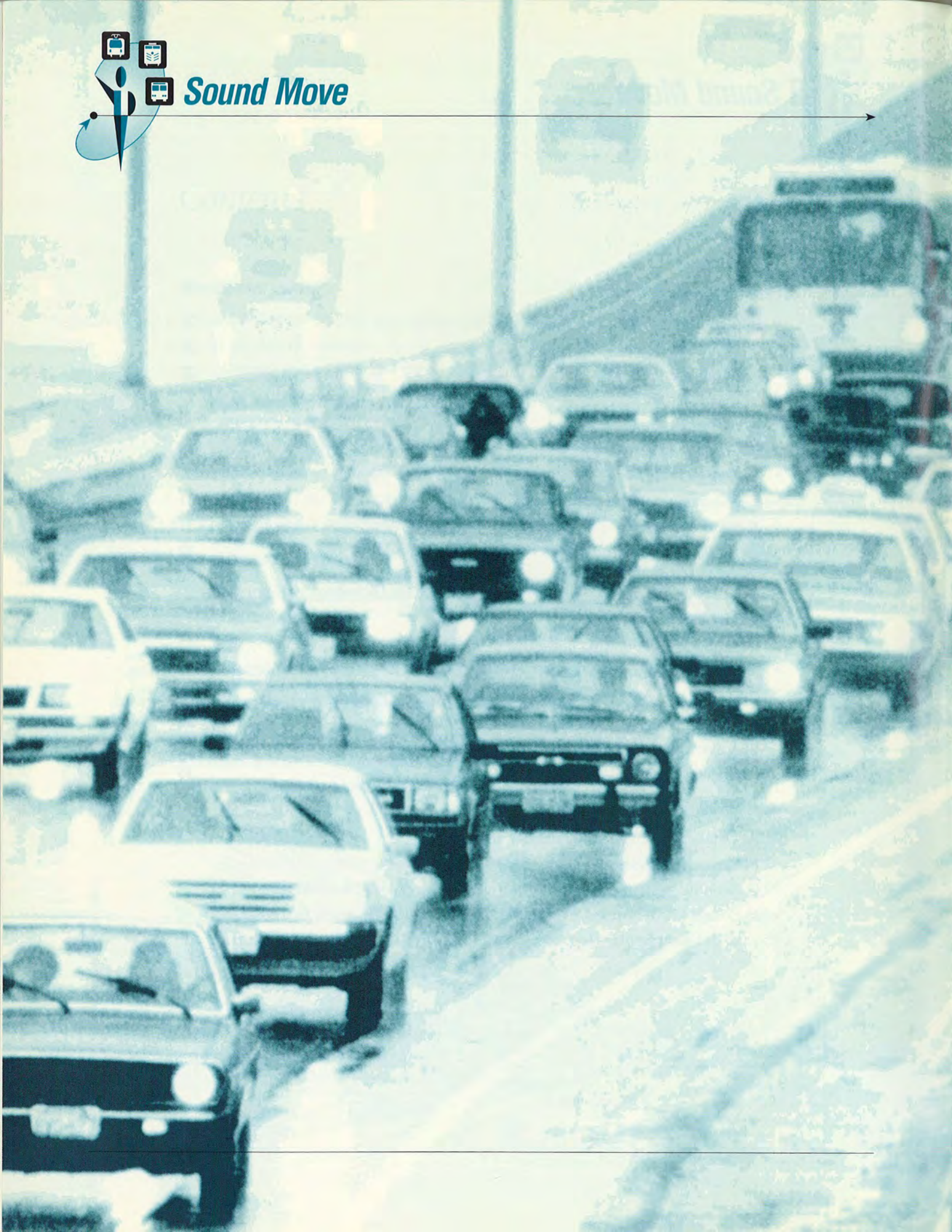
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Why regional transit?

There's an old saying that advises "if it ain't broke, don't fix it." But if you are one of thousands of people traveling on our region's overburdened and clogged highways each day you can probably relate to a modified version of that proverb — it's broke, let's fix it.



The problem is traffic congestion. Our region rates some of the worst traffic in the country (ranking behind only such major cities as Los Angeles, San Francisco, Chicago and New York). We've outgrown our transportation system. In the time it took to build our current freeway system, the region's population grew by two-thirds. At the same time, the number of miles people travel each day grew by a whopping 450 percent. Today's increased number of two-worker households, more frequent job changes and longer work commutes are putting more demand on our transportation system than it can handle.

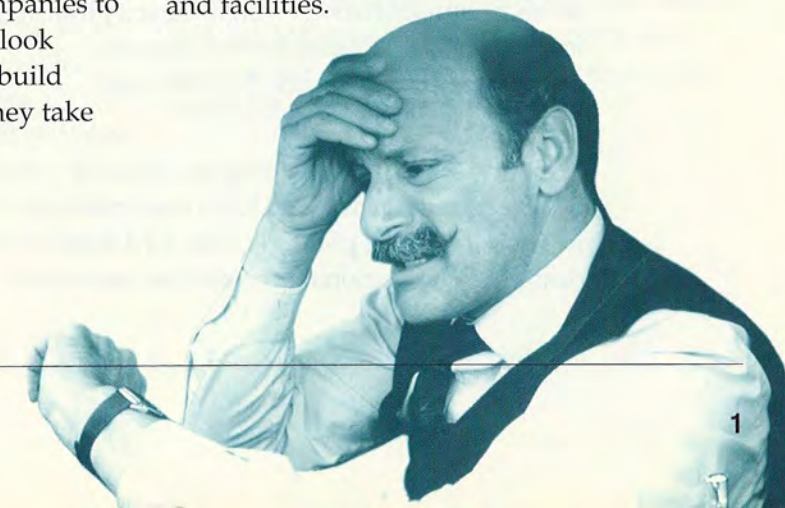
No one likes traffic. It takes a frustrating toll on our time and our nerves. But much more sobering and far reaching is the impact congestion has on our jobs, economy and environment. Congestion reduces productivity by making it harder for employees to get to work on time. Those same traffic jams also make it more difficult to get goods to market. Such impacts can cause existing companies to relocate and potential businesses to look elsewhere for places to expand and build factories. And as companies leave they take vital jobs with them.

Just building more roads won't solve the problem. There isn't enough space or money to build enough roads to keep up with growing transportation needs. Southern California learned a costly lesson that investing billions in more roads and freeways doesn't eliminate congestion.

The answer is to take a cost-effective and balanced approach to increase the capacity of the existing system by offering a package of transportation options — including improving transit and increasing road capacity in some areas. Collectively that system of options could actually slow congestion growth, reduce the growing strain on our roads and provide a reliable, efficient and congestion-free alternative for those that use it.

Sound Move — the ten-year system plan

Sound Move — the Ten-Year Regional Transit System Plan being proposed by the Central Puget Sound Regional Transit Authority — takes just such an approach to begin "fixing" our transportation system. It's the first, ten-year step toward a long-range Regional Transit Vision. That vision is to expand the capacity of our region's major transportation corridors by adding new high-capacity transportation services and facilities.



Sound Move includes a mix of transportation improvements — High-occupancy-vehicle Expressway, regional express bus routes, commuter rail and light rail. The plan includes new community “gateways” — connections in urban and suburban areas for communities to connect to the rest of the region.

Sound Move is an opportunity for the region to test drive a regional transit system before deciding how much more of the vision to commit to.



One piece of the puzzle

Sound Move isn't the only thing planned to fix our regional transportation system, nor has it been prepared in a vacuum without coordination with other regional efforts and agencies. The plan was developed to fit within the region's comprehensive Metropolitan Transportation Plan. That plan includes all forms of transportation — high-capacity transit, local transit, HOV lanes, ferries, airports, automobiles, freight traffic, bicycles, and pedestrians.

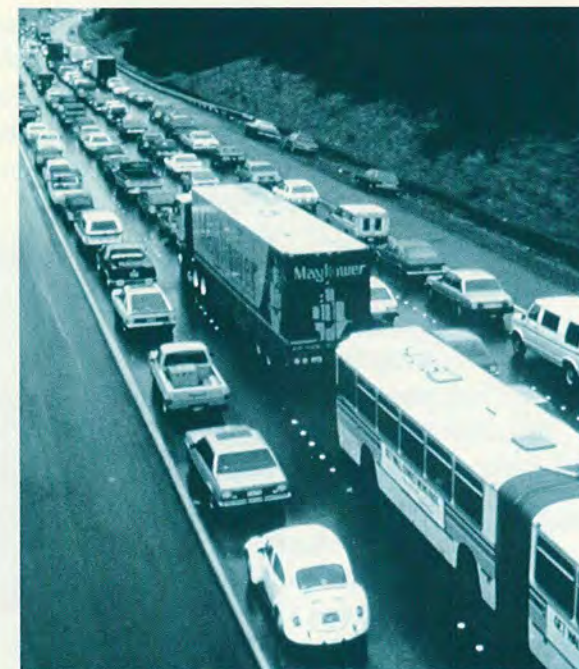
Sound Move also fits with the plans of local transit agencies who have been partners in regional transit planning. The RTA has designed new regional services that are



coordinated with services provided by local transit and transportation agencies, offering a regionwide integrated system of routes, schedules and fares.

Growing and growing and growing...

Growth in any area is desirable and is the by-product of a strong, healthy and competitive economy. In another 25 years there will be 1.4 million more people living here. In addition to being part of the comprehensive Metropolitan Transportation Plan, Sound Move fits in with the region's adopted vision for guiding future growth in ways that maintain our region's high quality of life and preserve its environment. The high-capacity transit system's purpose is to improve mobility within the urban areas by providing travel alternatives so they may grow comfortably while preserving rural areas for future generations.



The benefits

Investing in mobility

Transit today carries 40 percent of the trips through our region's most congested areas at the most congested times. If all of the people currently using transit switched to driving alone they would create a line of bumper-to-bumper cars almost 700 miles long (enough cars to completely fill all the lanes of the Interstate 5 and Interstate 90 within the region).

Sound Move will expand on existing local transit services with a convenient, reliable, easy-to-use regional system that is less susceptible to congestion than current services. By year 2010, Sound Move will increase transit system ridership to a level that equals a line of cars more than 950 miles long (a line of cars that could easily stretch to San Francisco, and then some).

Sound Move can make public transportation a viable and attractive alternative to driving alone by offering fast, frequent service and a wide array of transportation options with regionwide connections. And Sound Move includes a single-fare system allowing people to travel around the region using a variety of transit services with a single ticket or pass.

Investing in regional connections

Sound Move creates more and better regionwide connections providing access to job sites, schools, shops, museums, parks, theaters and sports arenas to everyone regardless of whether they have access to an automobile. Sound Move can help attract large special events to the region. Atlanta was selected to host the 1996 Summer Olympics in part because it had a rapid transit system capable of handling large numbers of people.



Sound Move can provide direct connections to the Kingdome, the new baseball stadium, Husky Stadium, the Tacoma Dome, Meydenbauer Center and the Washington State Convention and Trade Center. Those connections will provide the capacity to handle large crowds and ridership surges.

Investing in our economy

An investment in transit is an investment in our region's long-term mobility and economic stability. The alternative to investing in our transportation system is worse congestion. And congestion already costs our region an estimated \$1.2 billion a year in wasted time, money and resources.

Sound Move includes a new HOV expressway system and two new rail systems — electric light-rail and commuter rail. It is estimated that a \$100 million investment in transit capital improvements generates some 6,000 direct and indirect jobs and a threefold increase in business revenues.

High-capacity transit can help attract businesses and jobs to the region by helping make the overall transportation system work better and give employees better (and more) transportation choices. The presence of transit stations and community transit connection points can encourage long-term commitments from developers to invest and locate businesses near stations.

Investing in reliable, easy-to-use transit to keep pace with our growing population will enhance economic stability and actually add to the tax base of the region, thus enabling us to address other needs, including other transportation improvements.

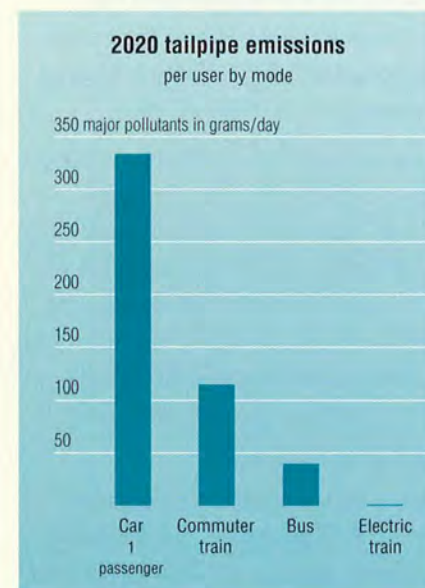
For example, the Commonwealth of Virginia invested in its Metrorail heavy-rail system (serving Washington D.C.) starting in 1974. Twenty years later they found that the investment provided a net rate of return to the community of more than 12 percent annually and generated 26 million square feet of commercial development (2 million above what was projected). And by year 2010 Metrorail is projected to have generated 90,000 permanent jobs and spurred \$15 billion in new development.



Investing in our environment

Transit already accounts for 75 million trips a year regionwide, or about 258,000 trips daily 365 days a year. Imagine the effects on our air and water quality if those trips were

made by car instead? Cars are our largest source of air pollution and energy use. All types of public transportation (trains, buses, carpools and vanpools) produce far less grams of air pollutants per rider than a single-occupant car. Sound Move provides several convenient and reliable energy-efficient alternatives to driving alone.



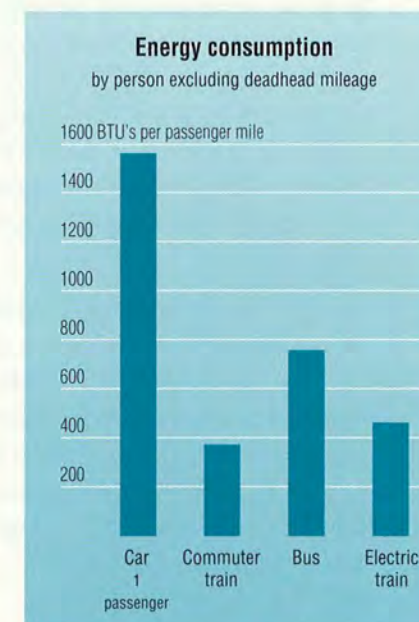
Sound Move's rail components require only one-third of the right-of-way of a six-to eight-lane freeway but provide the people-moving capacity of a 12-lane freeway. Because less land is needed, natural resources and scarce open space are easier to preserve and protect.

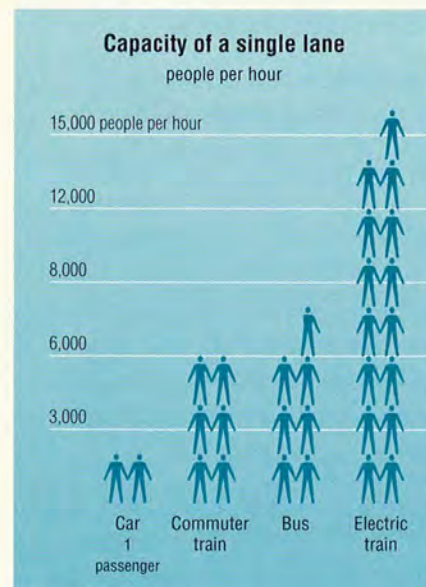
Sound Move provides the tools to make the region's growth management plan work by connecting cities and major centers. The regional transit system plan also supports adopted land-use plans and helps meet transportation demand management goals. Similarly, transit-supportive local land-use planning and implementation are critical to the success of ten-year system plan investments.

Principles and commitments

By adopting this ten-year plan, the RTA commits to the following principles:

- **Regional scope** — the RTA's plan is a regional system designed to recognize regional as well as local needs throughout the three-county RTA District. The RTA recognizes that investments in any particular subarea yield benefits throughout the region, and that these shared benefits help tie the RTA District together.
- **Conservative funding assumptions** — the primary funding sources will be modest voter-approved local tax increases, federal grants and long-term bonding. The RTA assumes no state funds, thus placing no additional demand on limited state resources that are needed for other regional transportation investments.





The RTA assumes federal funding for new rail starts of \$55 million per year and other federal funding sources of \$18 million per year. Additional funds will be requested but the plan does not speculate beyond current sound estimates of federal support.

Local tax rate increases will include a local sales tax increase not to exceed

4/10 of one percent and a motor vehicle excise (license tab) tax increase not to exceed 3/10 of one percent.

- **Equitable distribution of revenues** — local tax revenues will be used to benefit the five subareas of the RTA District (Snohomish County, North King County, South King County, East King County and Pierce County) based on the share of revenues each subarea generates. This distribution formula will apply to all future phases.
- **Simultaneous work on projects in all subareas** — work will begin on projects in each of the subareas so benefits will be realized throughout the region as soon as possible. Projects likely to be implemented in the latter part of the ten-year period are those requiring extensive engineering and community planning.

- **Coordinated services** — regional and local transit services will be coordinated and a single fare structure will be used.
- **System completion within ten years** — different parts and segments of the plan will be implemented in stages and be operational as soon as possible; the entire system will be completed and operational within ten years.
- **System expansion or tax rollback** — Any second phase capital program which continues local taxes for financing will require voter approval within the RTA District. If voters decide not to extend the system, the RTA will roll back the tax rate to a level sufficient to pay off the bonds and operate and maintain the investments made as part of Sound Move.
- **Annexations and extensions of service outside the RTA District** — the RTA may provide services outside the taxing district by contracting with local agencies. Areas that would benefit from RTA services may be annexed into the RTA District if citizens within those areas vote for annexation.
- **Public accountability** — the RTA will hire independent auditors and appoint a citizen committee to monitor RTA performance in carrying out its public commitments. Citizens will be directly involved in the placement, design and implementation of facilities in their communities.

The Regional Transit District

The RTA District boundary is shown on the RTA District map (see page 8). It defines the service area as required by state law. The RTA District currently includes the most congested "urban" areas of King, Pierce and Snohomish counties.

The RTA District boundary lines generally follow the urban growth boundaries created by each county in accordance with the state Growth Management Act. The urban growth boundaries guide how and where growth will take place in each county. The RTA District boundary was adjusted in some places in consideration of voter precinct boundaries, city limit lines, and geography.

The RTA boundary:

- shows the area where high-capacity transportation (HCT) services will be added to our transportation system
- establishes representation on the RTA Board as prescribed by state law
- shows the area in which local taxes authorized by voters to help finance the Regional Transit System will be collected
- demonstrates how regional services and facilities can support growth management goals and adopted land-use plans.

For planning and budgeting purposes the RTA has divided the district into five geographic subareas. The system components in Sound Move address unique needs in each of these areas. The local tax revenues generated in each of these areas will be spent on the investments that benefit those areas.

Annexing new areas and extending RTA services

Annexations

According to state law, after voters within the district boundaries have approved a ballot proposition authorizing local taxes to support the ten-year system plan, the RTA Board may approve resolutions calling for elections to annex areas outside, but adjacent to, the RTA District. An annexation may require adoption of a revised RTA *Regional Transit Long-Range Vision*.

The following legal requirements are required to annex areas into the RTA:

- **Board membership** — If the RTA District changes, a change in the make-up of the RTA Board membership may be required. Board membership must be "representative" of the proportion of the population from each county that falls within the RTA District.





- **Areas that may be annexed** — Areas that would benefit from RTA services may be annexed into the RTA District. Services or projects proposed must be consistent with the central Puget Sound region's Metropolitan Transportation Plan.
 - **Adoption by RTA Board and City/County councils** — The RTA Board may call for annexation elections after consulting with any affected transit agencies and with the approval of the legislative authority of the city or town (if the area is incorporated) or with the approval of the area's county council (if it is unincorporated).
 - **Tax vote by area citizens** — Citizens in areas to be annexed are permitted to vote on annexation and imposition of taxes at rates already imposed within the RTA District boundaries.
- Because the RTA encourages areas to annex into the district as early as possible to expand access to regional transit system benefits, the authority will include the following policies in annexation agreements:
- the RTA will not attempt to recover the capital costs from annexed areas of facilities put in place before the annexations
 - the RTA commits that, when annexed, the taxes from areas joining the RTA District will be used only for specific facilities and services for up to 5 years as described in an inter-local agreement with that area. After 5 years, the tax revenues from an annexing area would be combined with funds from the appropriate subarea.



Extending RTA services beyond district boundaries

The RTA will commit to extending new services beyond its boundaries to make connections to significant regional destinations contingent on agreements with local government agencies. Such service extensions would be implemented at a mutually agreeable cost.

This option would permit areas outside of the RTA District to function as part of the regional system. Extending RTA services outside of its district would require agreements with the affected local transit agency or other appropriate government agencies.

The RTA will enter into agreements with agencies beyond the district boundary to integrate fares. This will allow flexible transfers between various transit operators and prevent citizens who live outside the district from being penalized for making regional trips via transit instead of an automobile.

Sound Move — the Ten-Year Regional Transit System Plan

A system of HCT corridors and new community connections

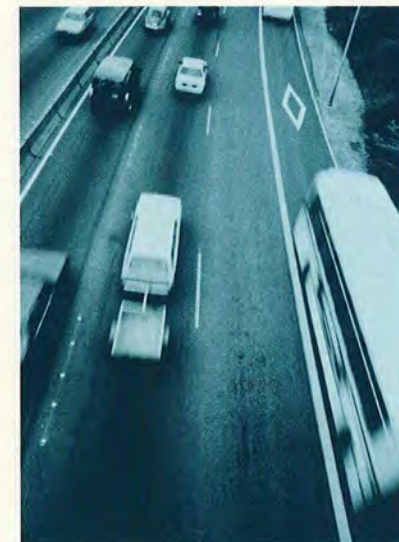
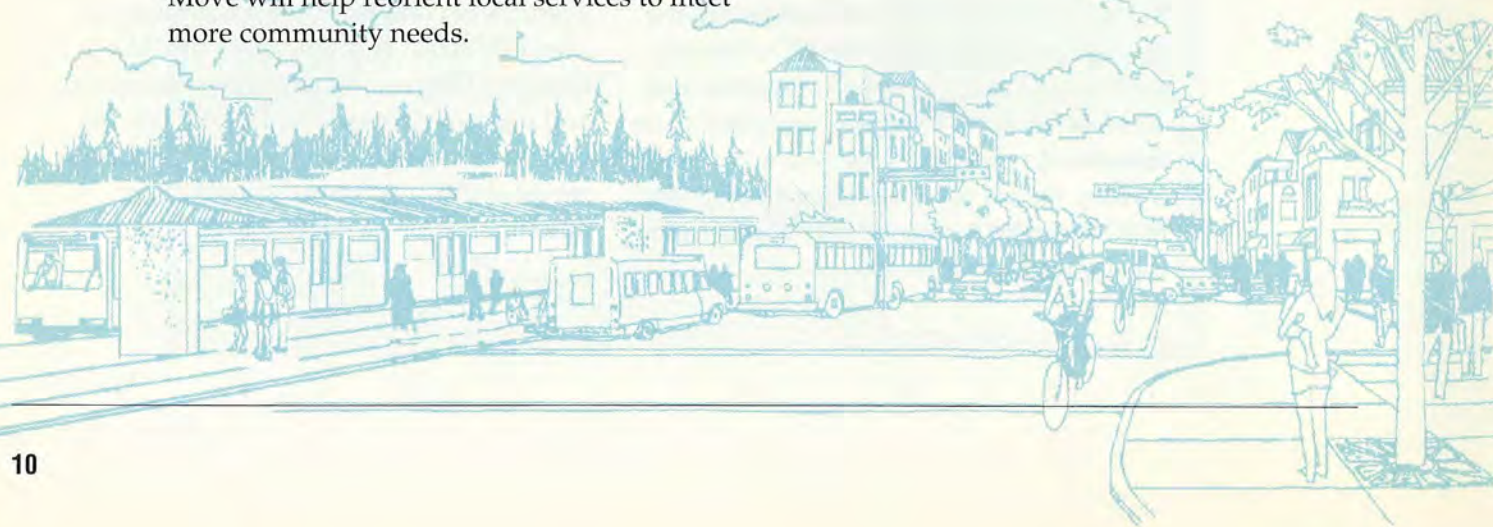
Sound Move is the first step toward improving the way we, as a region, move. In turn, the plan maintains our region's economic strength locally and globally. It focuses on the most congested areas of our region, creating a comprehensive, regional high-capacity travel network. Whether people are traveling to work, school, recreational opportunities or shopping, the goal is to provide more options — dependable alternatives for getting around in our communities and the region.

One of the most important features of Sound Move is that it provides a network of frequent, convenient and dependable services that can be used with a single ticket (see the ten-year system plan map). The services are tailored to the unique needs of the diverse subareas within our region.

Think of Sound Move as the tie that binds the region together, connecting the communities of the Central Puget Sound region in a way that supports local land-use plans, joins economic centers and expands local transit services. By providing direct connections to many destinations, Sound Move will help reorient local services to meet more community needs.

New regional transit services will free up significant bus service hours now provided by local transit agencies. The RTA will work with local transit agencies to identify local service and/or community connections such as park-and-ride lots that support the regional transit system. These local resources will be distributed to subareas based on the investment each makes in the regional service responsible for freeing local bus service hours.

Transit centers, park-and-ride lots, commuter rail and light rail stations will be developed to encourage and promote joint development through public/private partnerships and partnerships with local jurisdictions. These partnerships will provide opportunities to attract and shape development at and around community connections in ways that benefit both transit users and adjacent communities. The joint development program will encourage services and businesses that support transit-use, walking and bicycling. Paired with improved access for pedestrians and persons with disabilities, the joint development program will broaden the scope of community connection benefits.



High-capacity travel corridors

In developing a comprehensive transportation plan, planners look at the main travel corridors or routes that people use to go from one point in the region to another. For example, Interstate 5 is a major north-south travel corridor in the region. Sound Move expands on existing travel corridors

and creates new high-capacity transportation (HCT) corridors linking our economic centers and communities. The types of investments made to create this system of HCT corridors have three objectives:

- do more with what we have
- build on existing facilities
- begin building new corridors.

High-occupancy-vehicle Expressway with regional express buses

The HOV Expressway will be developed through a partnership between the RTA and the state Transportation Department. It expands and improves upon a network that the region has already begun, creating a permanent part of our regional transit system. The HOV Expressway includes the state's program to fill the gaps and extend the existing HOV-lane system to create a continuous inside-lane HOV network.

The RTA will fund special access ramps to make it easier for transit and carpools to reach and use the HOV Expressway. Traffic flow will also improve in general purpose lanes since buses and carpools will no longer have to weave through several lanes of traffic to reach the HOV lanes.

The HOV Expressways create new links between suburban centers serving our region's fastest growing areas with fast efficient transportation options. A single HOV lane carries the same number of people as three general traffic lanes.

New regional express bus routes will take advantage of the improved speed and reliability the HOV Expressway will offer. The new high-speed regional express bus routes will offer frequent, two-way service throughout the day. The regional express buses will serve major regional centers and destinations and provide connections to other transportation components of Sound Move.



Working with the state Transportation Department and through the annual budget review process, the RTA will fund construction of new access ramps to the existing and already funded HOV lanes or fund other appropriate alternatives. The state Transportation Department will then move all HOV lanes in those corridors to the inside lane of the road.

The RTA Board views completion of the state's freeway HOV lane "core system" in the Puget Sound region as an important priority. However, the RTA assumes the state will complete construction of the core HOV lane system in accordance with its freeway HOV policy.

If the state does not fulfill its funding obligation, the RTA Board will conduct an open and public process to determine whether RTA funding is available (e.g. from savings realized in other program elements) and should be used to help complete the core HOV lane system.

Because the RTA will be making a significant investment in the state high-occupancy vehicle system, it will have an ongoing interest in how that system functions. Before committing funds for HOV projects, the RTA Board must be satisfied that the HOV system will be managed in a way that maintains adequate speed and reliability for transit into the future.



The RTA will negotiate an agreement with the state Transportation Department and the Puget Sound Regional Council similar to the state Transportation Commission's existing Statewide Freeway High-Occupancy Vehicle Policy to specify mutually acceptable speed and reliability standards, and how those standards will be monitored and maintained. In negotiating this agreement the RTA will seek to specify how it will be compensated if those standards are not maintained and the advantages to transit created by its investment are reduced.

The RTA will develop park-and-ride lots and transit centers that support the HOV Expressway and regional bus systems through a joint development program designed to establish and promote public/private partnerships and partnerships with local jurisdictions. The RTA will look at ways to develop facilities that are pedestrian-friendly and easier to reach from adjacent communities by alternatives to the car (i.e. walking, biking and transit). Access improvements that extend the benefits and the scope of transit system to more people and to more places will be considered eligible for RTA funding as part of individual project budgets.



Commuter rail

The commuter rail component adds two-way rush-hour train service using existing railroad tracks between Everett, Seattle, Tacoma and Lakewood. Commuter rail will offer a fast, dependable and easy-to-use commute option, linking major destinations in Snohomish, Pierce and King counties.

The 81-mile commuter rail system includes 14 stations (and three provisional stations) as part of Sound Move. Additional stations may be built in future phases. Commuter rail will share several stations with Amtrak and the state's expanding intercity rail service between Portland and Vancouver, B.C., creating opportunities for interstate and local connections.

Commuter rail builds on a railroad network already in place, increasing the transportation system's people-moving capacity and, by making necessary track and signal improvements, improving the capacity of those lines for other passenger and freight trains as well.

Recognizing the on-going siting and design process for a new ballpark and other potential sports complex improvements in the Kingdome area, the RTA will also explore the possibility of providing special event commuter rail service if funding is available.

The RTA will develop park-and-ride-lots, transit centers and stations that serve and support the commuter rail system through a joint development program promoting public/private partnerships and partnerships with local jurisdictions. The goal of the program will be to encourage transit and pedestrian access to stations by establishing



and promoting partnerships with parties interested in locating in areas served by commuter rail. The joint development program will try to establish transit and pedestrian-friendly improvements and land uses in

surrounding areas. Access improvements that extend the benefits and the scope of transit system to more people and to more places will be considered eligible for RTA funding as part of the budget for each station.

Electric light rail

The electric light rail component adds a new form of high-capacity transit for our region. The service is designed to connect Northgate, Roosevelt, the University District, Capitol Hill, First Hill, downtown Seattle, the Rainier Valley area and SeaTac (terminating at South 200th Street) — the state's highest employment areas with the highest transit ridership in the region.



Sound Move includes 25-miles of a starter light rail system with 26 stations within walking distance of major destinations as well as connections to local bus service. Some stations will include connections to regional express buses, commuter rail, the Monorail and the Waterfront Streetcar. The most significant investment required for the electric light-rail system — the downtown Seattle transit tunnel and its five stations — is already in place.

Recognizing the on-going siting and design process for a new ballpark and other potential sports complex improvements in the Kingdome

area, the RTA will explore the possibility of providing special event electric light-rail service, including a potential light-rail spur serving the sports facilities if funding is available.

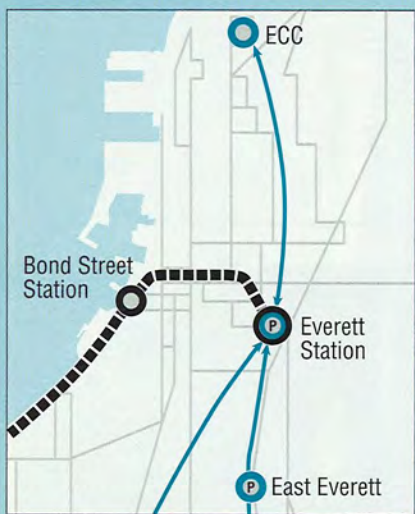
Sound Move also includes light-rail service connecting downtown Tacoma with the regional transit terminal near the Tacoma Dome where riders can connect with regional express services, commuter rail and Amtrak. Four stations will serve downtown Tacoma destinations.

The RTA has identified reliable funding sources for building the light-rail line between the University District and SeaTac (South 200th Street). The RTA expects to find, and will aggressively seek, additional funding sources to build the segment of the light-rail line between the University District and Northgate. If additional funds are not found, the University District to Northgate segment will not be built. If voters authorize additional capital programs after the ten-year system plan is otherwise in place, this segment will be the first to be built under the new program.





Downtown Everett detail



Downtown Seattle detail



Downtown Tacoma detail



Map key:

Electric Light-Rail Service

Electric light-rail trains in the region's most densely-developed areas. Dashed line indicates the portion of the light-rail system that will be built if additional funding is secured.

Commuter Rail Service

Trains using existing railroad tracks between Everett, Seattle, Tacoma and Lakewood.

HOV Expressway

A continuous system of HOV lanes with special access ramps for transit and carpools. Diamonds indicate direct access ramps or flyer stops.

Regional Express Bus Service

New express bus routes using the HOV Expressway, major arterials and expanded system of park-and-ride lots.

Local Bus Service

Network of bus routes provided by local transit agencies.

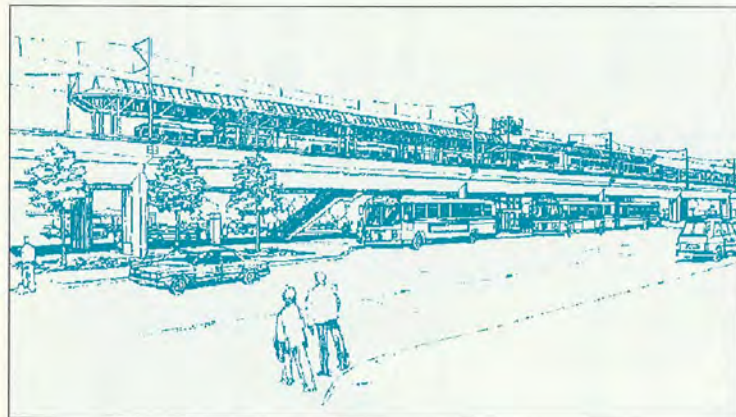
Community Connections

Major points where local and regional transit services connect. "P" indicates park-and-ride enhancements or new capacity.

Note: Full implementation of the HOV Expressway requires partnership with the Washington State Department of Transportation.

* Provisional station subject to funding availability from within the North King County subarea.

As adopted May 31, 1996



The electric light-rail line is a cost-effective way to serve the core of the regional system where transit ridership is the highest. This new transportation link provides a stepping stone for expansion into the next century (a two-way light-rail line can carry the same number of people as 12 freeway lanes).

The Northgate to SeaTac (South 200th Street) light-rail line will be built in three segments. The first segment will be a line south between downtown Seattle and the airport serving the Rainier Valley area. That part of the system will be built primarily on aerial structures and on the surface through southeast Seattle. The south light-rail line will include connections at the Boeing Access Road station to regional express buses and commuter rail. Between Boeing Access Road and SeaTac, the RTA will evaluate an alignment using State-Route 99 and an alternative route using Interurban Avenue to Southcenter.



The second segment will be built between downtown Seattle and the University District via a tunnel under First Hill, Capitol Hill and the Ship Canal. The engineering work for the north line will take longer to complete than the south line so construction of the north line will likely not begin until the south line is already under construction. The third segment of the light-rail line will be between the University District and Northgate, and will be built when construction funds have been identified and guaranteed.



Innovation fund

Since we live in an age of continual change, Sound Move provides flexibility to consider new ideas, services and technology innovations.

The RTA will evaluate and fund innovative ways to provide transit service, reduce dependency on single-occupancy vehicles, improve public transportation's cost-effectiveness, and better respond to customer needs. The RTA will evaluate technological innovations (alternative fuels and propulsion systems, quieter equipment, lighter vehicles, energy efficient engines, and ways to improve passenger comfort) and ways to reduce impacts on the environment. The RTA will also explore incentives and programs to encourage people to use regional transit more.

The RTA will work with the community and the private sector to take part in a demonstration of personal rapid transit (PRT) or other technologies. PRT is an experimental type of automated transit consisting of small cars running on a guideway carrying two to six passengers per car. The demonstration could show how PRT or other new technologies could be appropriate investments in future transit system phases.



Photo courtesy of Titan PRT Systems, Inc.



Working together — a coordinated system of services

By coordinating with local transit and other transportation services Sound Move will make it convenient and easy to move around the region. Crucial to the ten-year system plan and the entire regional transportation system are the mechanisms that make different transportation components work together to create an efficient network connecting the entire region. These mechanisms include:

- coordinating local and regional transit schedules, tying services together and creating important regionwide connections
- building transit centers, park-and-ride lots and stations where different types of transportation come together to make connections simple and efficient
- developing a uniform pass or ticket that can be used on local buses, regional express buses and trains, making transfers easy.

Gateways to the region — community connections

Combined, new regional HCT corridors and services will link our economic centers and provide new connections for local communities. Sound Move will create new “gateways” from communities to the region and from the region to communities. Those gateways include transit stations, park-and-ride lots, transit centers and rail stations that create community connections where people can reach their destination on foot, by bicycle, or by accessing other transportation services.

New park-and-ride lot capacity improvements will be prioritized at locations where HOV direct access and regional bus service increases demand and where no surplus capacity exists. Criteria used to guide park-and-ride lot investments include: HOV direct access, adequate regional and/or local bus service levels and achieving standards for current and projected use.

The following matrix shows the hundreds of connections that will be possible at these new gateways (note: some facilities listed are existing but will be served by new regional RTA services under the Ten-Year Plan):

Snohomish County

	Com. Rail	Reg. Bus	Local Bus	Park & Ride	HOV Access	Ferry	Amtrak	Ped./Bike
Everett Multi-Modal Station	●	●	●	●				●
Bond Street Station	●		●				●	●
East Everett Park-and-Ride		●	●	●				
N. Everett Transit Center		●	●					●
S. Everett Transit Center		●	●					●
112th Park-and-Ride & flyer stop (Everett)		●	●	●	●			
Mukilteo Station	●		●	●		●		●
Swamp Creek Park-and-Ride		●	●	●	●			
Ash Way Park-and-Ride		●	●	●	●			
Mountlake Terrace flyer stop		●	●	●	●			
Mill Creek		●	●					
Lynnwood Park-and-Ride enhancements		●	●	●	●			
Lynnwood Transit Center		●	●	●	●			●
Edmonds Multi-Modal Station	●		●			●	●	●

Other projects: Pacific Avenue overpass (Everett); Lynnwood Transit Center/Park-and-Ride lot connection

North King County

	Lt. Rail	Com. Rail	Reg. Bus	Local Bus	HOV Access	Amtrak	Ped./Bike
Aurora Village Transit Center			●	●			●
Richmond Beach		*		*			*
Shoreline			●	●			●
Lake Forest Park			●	●			●
Lake City			●	●			●
Northgate Transit Center			●	●			●
Northgate Station	*		*	*			*
Roosevelt Station	*			*			*
Ballard Station		*		*			*
N. University District Station (45th)	●		●	●			●
S. University District Station (Pacific)	●		●	●			●
Capitol Hill Station	●			●			●
First Hill Station	●			●			●
Convention Place Station	●		●	●			●
Westlake Station	●		●	●			●
University Street Station	●		●	●			●
Pioneer Square Station	●		●	●			●
King Street/International District Station	●	●	●	●	●	●	●
I-90/Rainier Station (Atlantic St.)	●		●	●			●
McClellan Street Station	●			●			●
Columbia City Station (Edmonds St.)	●			●			●
Othello Street Station	●			●			●
Henderson Street Station	●			●			●
Georgetown Station		*		*			*
West Seattle Junction			●	●			●
Fauntleroy			●	●			●

* Provisional station subject to funding availability from within the North King County subarea.

South King County

	Lt. Rail	Com. Rail	Reg. Bus	Local Bus	Park & Ride	HOV Access	Ped./Bike
Boeing Access Road Station	●	●	●	●	●		●
Tukwila Commuter Rail Station		●	●	●	●	●	●
Tukwila Light Rail Station	●			●			●
N. SeaTac Station	●			●	●		●
Sea-Tac Airport Station	●		●	●			●
SeaTac Station (S. 200th St.)	●			●	●		●
Burien Transit Center			●	●	●		●
Kent/Des Moines			●	●	●		●
Kent Commuter Rail Station		●	●	●	●		●
Auburn Station		●	●	●	●		●
Federal Way Transit Center			●	●	●	●	●
Star Lake Park-and-Ride (Federal Way)			●	●	●	●	●

East King County

	Reg. Bus	Local Bus	Park & Ride	HOV Access	Ped./Bike
Canyon Park Park-and-Ride	●	●	●	●	●
Bothell Transit Center	●	●	●		●
Woodinville Park-and-Ride	●	●	●		●
Kirkland Transit Center (124th)	●	●	●	●	●
S. Kirkland Park-and-Ride	●	●	●		
Redmond Park-and-Ride	●	●	●		●
NE 40th Transit Center (Redmond)	●	●	●		●
Eastgate Park-and-Ride	●	●	●	●	●
Bellevue Transit Center	●	●		●	●
S. Bellevue Park-and-Ride	●	●	●	●	
Mercer Island Park-and-Ride	●	●	●	●	●

East King County (continued)

	Reg. Bus	Local Bus	Park & Ride	HOV Access	Ped./Bike
Issaquah Transit Center & Park-and-Ride	●	●	●	●	●
Newport Park-and-Ride		●	●		
Newcastle Transit Center		●	●		●
Renton Transit Center	●	●	●	●	●
Other projects: Willows HOV (Redmond); Woodinville arterial HOV enhancements; I-90 two-way center roadway; SR 522 HOV enhancements					

Pierce County

	Lt. Rail	Com. Rail	Reg. Bus	Local Bus	Park & Ride	Amtrak	Ped./Bike
Sumner Station		●	●	●	●		●
Puyallup Station		●	●	●	●		●
Tacoma Dome Multi-Modal Station	●	●	●	●	●	●	●
S. 24th Street Station	●			●			●
University & Museum Station (S. 19th St.)	●			●			●
S. 13th Street Station	●			●			●
Theater District Station (S. 9th St.)	●			●			●
TCC Transit Center			●	●			●
South Tacoma Station		●	●	●	●		●
Lakewood Station		●	●	●	●		●
SR 512 Park-and-Ride			●	●	●		●
Dupont Park-and-Ride			●	●	●		●
Parkland			●	●			●
South Hill Park-and-Ride			●	●	●		●

Using the system

Easy system access



Sound Move will create a regional transit system that is easy to reach and use by everyone including pedestrians, bicyclists, people with disabilities and other public transportation customers.

The RTA will work with local public transportation agencies, communities and local governments to place and design transit facilities that fit with local community plans. This will include making improvements

within one-half mile of each station for safe, easy transit, pedestrian and bicycle access.



Transit facility designs will be flexible, allowing each station to reflect and fit into the community it serves while providing standard features for transit customers such as:

- security and safety design standards
- consistent route and schedule information
- easy-to-read and consistent signs
- pedestrian-friendly design and full access for people with disabilities
- bicycle access and storage

- transit-friendly access to allow smooth transfers from one type of public transportation to another (i.e. bus to rail, or bus to bus).
- convenient taxi access.

A one-ticket ride

Since high-capacity transit is just one part of the overall regional transportation system, it is important that Sound Move work well with services already being provided or planned at the local and statewide level. One way to make sure Sound Move provides a smooth connection with other services in the region is to develop a uniform, single-ticket fare system among local and regional transit providers. This will allow customers to use a single ticket or pass to travel on any and all of the types of transit within the region (i.e. local bus, regional bus, light rail, commuter rail and ferries). The RTA will work with public transportation providers in the region to develop an integrated fare policy for the entire public transit service network.



Coordinated routes and schedules

Simple and coordinated connections are necessary between all parts of the regional transportation network — buses, rail, ferries, carpools, vanpools, shuttles, circulators, intercity rail lines, taxis, airports, bicycles and pedestrians. These simple and coordinated connections can be achieved by sharing stations, simplifying transfer policies and using common fares.

An important part of integrating these services is providing several stations or transit centers where many transportation services come together, making transfers and connections convenient and expanding the scope of the entire transportation system.

For example: Say you live in Bellevue and want to go to the University of Washington. You catch a local bus to the Bellevue Transit Center, transfer to a regional express bus which takes you directly to the University — all accomplished with a single ticket.

Or say you want to take advantage of the state's new intercity rail service between Portland and Vancouver, B.C. but don't live near an Amtrak station but do live near a commuter rail station. You can take commuter rail to one of three combined commuter rail, intercity rail and Amtrak stations and purchase a ticket for either an intercity rail or Amtrak interstate destination. Those stations will also be served by local and regional bus service as well as taxis.

The RTA will work with local transportation providers to make sure that local and regional transit schedules mesh and that parallel, competing services are avoided.

Putting the system in place

Implementing the plan in stages

The ten-year timeframe for putting the plan in place begins the day after voters approve funding for the new regional transit system. The plan that is presented to the voters represents the RTA's preferred system based on extensive system-level planning and public involvement conducted to date. As the RTA proceeds to more detailed planning and engineering levels, it will continue to identify and evaluate alternatives that might achieve the same system goals and benefits more cost-effectively.



Individual parts of the system will come on line as they are completed and the entire system should be up and running within 10 years. While putting each part of the plan in place, the RTA will use a variety of techniques to make sure that the system is developed and operated as cost-effectively as possible. Techniques could include: value engineering, citizen committees, technical review committees and expert review committees. As services begin operating, the RTA will monitor system performance and productivity and make changes to service plans when appropriate.

HOV Expressway

Working with the state Transportation Department and through the annual budget review process, the RTA will fund construction of new access ramps to the existing and already funded HOV lanes or fund other appropriate alternatives. The state Transportation Department will then move all HOV lanes in those corridors to the inside lane of the road.

The RTA Board views completion of the state's Freeway HOV Lane "core system" in the Puget Sound region as an important priority. However, the RTA assumes the state will complete construction of the core HOV lane system in accordance with its freeway HOV policy.

If the state does not fulfill its funding obligation, the RTA Board will conduct an open and public process to determine whether RTA funding is available (e.g. from savings realized in other program elements) and should be used to help complete the core HOV lane system.

HOV access ramps are the preferred investment for improving speed and reliability of regional express buses by eliminating the need to weave across general purpose lanes to reach HOV lanes. Before building individual HOV access ramps, the RTA will work with the state Transportation Department, local transit operators, local jurisdictions and citizen committees to assess each facility's location and function. This assessment will determine whether there are ways to achieve equivalent transit speed, reliability and ridership at a lower cost or by making transportation system management



improvements instead. Regional and local land-use objectives and comprehensive plans will also be considered in the assessment.

Actual design and construction of all HOV lanes and ramps will be done by the state Transportation Department. Each HOV segment and direct access ramp will open as soon as the state Transportation Department completes it, with all of the RTA funded improvements operational by the end of ten years.

Regional express buses

Regional express buses will be purchased immediately and begin operating as soon as the vehicles are delivered. Maintenance and passenger facilities will be expanded as necessary. The RTA will enter into interlocal agreements with Pierce Transit, King County Metro, Community Transit and Everett Transit to operate the regional express bus routes using a single-ticket policy.

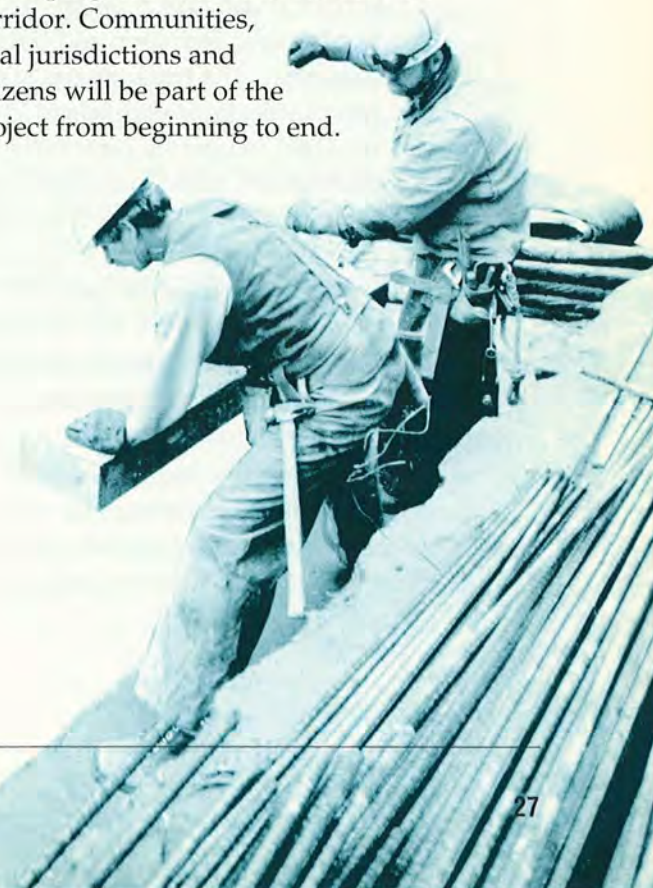
The RTA will work closely with local transit operators to put regional express bus services in place. Regional express bus service will be expanded along with local transit service changes to make sure the services are fully coordinated and that subareas receive

maximum improvements while the region receives maximum mobility.

In areas where existing transit markets or capital facilities don't currently support the planned new service levels, those services will be added in increments to match demand. The RTA and local transit agencies will monitor system performance and recommend changes to subarea service plans that are consistent with the RTA's adopted financial policies.

Commuter rail

The RTA Board and citizens from throughout the region have discussed and reviewed the benefits and costs of commuter rail during the entire system planning process. Because commuter rail is a major regional investment, there must be continued, deliberate and careful consideration given to developing this new north-south HCT corridor. Communities, local jurisdictions and citizens will be part of the project from beginning to end.





The commuter rail line between Tacoma and Seattle will begin operating first, followed soon after by the lines between Everett and Seattle and between Tacoma and Lakewood. Since a network of rail tracks is already in place, the necessary track and signal improvements needed for commuter rail service could take between two and four years to complete. Service could begin shortly thereafter. The track, signal and communications equipment improvements required to operate commuter rail will provide the speed and reliability necessary to offer attractive passenger service and build ridership in the corridor. These improvements will also improve the capacity, reliability and dependability of the state's intercity rail service, regular Amtrak interstate passenger service and freight train traffic.

Stage I —

Within the first two years following voter approval of funding for Sound Move, the RTA will:

- Develop contractual cost-sharing relationships with affected organizations and jurisdictions before putting commuter rail service in place (affected organizations and jurisdictions could include but are not limited to the Burlington Northern Santa Fe and Union Pacific railroads; the ports of Tacoma, Seattle and Everett; the state Transportation Department; Amtrak; the federal government; and local governments). These partnerships will result in lower capital costs than would occur if the RTA were to fund the improvements alone.
- Further analyze projected operating and maintenance costs to try to reduce costs. The goal is to achieve operating and maintenance subsidy levels that come as close as possible to regional bus service subsidy levels.
- Establish performance objectives to monitor and evaluate commuter rail service productivity related to cost, ridership and other relevant measures.
- Assess the results of the preceding tasks and make final decisions about what modifications — if any — should be made to the commuter rail program before any contracts are awarded (local jurisdiction review and public input will be an integral part of this process).

Stage II —

- The RTA will negotiate service-provider contracts as part of commuter rail operations to make sure the authority is reimbursed for capital facilities and equipment costs it may no longer need to use.
- Based on system performance and productivity monitoring, the RTA may choose to modify service (i.e. increase or decrease service; add or drop stations; add or delete segments; change days and times of service, etc.).

In keeping with RTA financial policies, any savings realized by modifying or reassessing the commuter rail program will be reallocated to the subarea originally assessed with that portion of program cost.

Electric light rail

The region has discussed and reviewed the benefits and costs of various electric light-rail alignments throughout system planning. Based on extensive public and jurisdictional discussion and review, the starter system



presented to the voters is the RTA's preferred alternative. However, since this is a major regional investment and provides the region with significant new transportation capacity, there needs to be continued deliberate and careful consideration of the alignments, markets served and station locations.

The Northgate to SeaTac (South 200th Street) electric light-rail line will be built in three segments that will be developed in several stages. The preferred alignment for the first segment is from downtown through the Rainier Valley to SeaTac (South 200 Street). Between Boeing Access Road and SeaTac, the RTA will evaluate an alignment using State-Road 99 and an alternative route using Interurban Avenue to Southcenter.

The preferred alignment for the second segment is from downtown Seattle through First Hill and Capitol Hill to the University District. The preferred alignment for the third segment is through the Roosevelt District to Northgate.

The first implementation stage will include environmental review, preliminary design and preferred alternative refinement for each of the three segments. This stage will also include an extensive community process to refine the preferred alternatives for each segment and define potential alternative alignments.

Before supporting construction of the preferred alternative, alternative alignments will be evaluated to determine which maximize ridership, minimize capital and operating cost per passenger trip and create the greatest economic net benefit. In particular, special attention must be paid to which alignment generates the most new ridership as opposed to riders simply shifting from one type of transit to another.

Once preliminary engineering and environmental review is completed the RTA will begin the next stage — final design and right-of-way acquisition followed by construction. The RTA intends to begin building the south segment first while final engineering is completed on the two north segments. When final engineering is complete, the RTA will conduct a major review of project funding status to make sure the authority's equity principle can be met before construction contracts are awarded. If the cost is lower than estimated and/or additional funds have been appropriated, the RTA will build the light-rail segment between the University District and Northgate.

When electric light-rail service begins operating in the downtown Seattle transit tunnel, the number of people using the tunnel will triple. This may require some buses to be shifted to surface streets. The RTA will work with Seattle and King County to address bus operational issues that may arise as a result of this shift.

As with any major construction project the community will be involved in the project from beginning to end. Opportunities for public and technical review will be included in each stage of the implementation plan.



Community connections

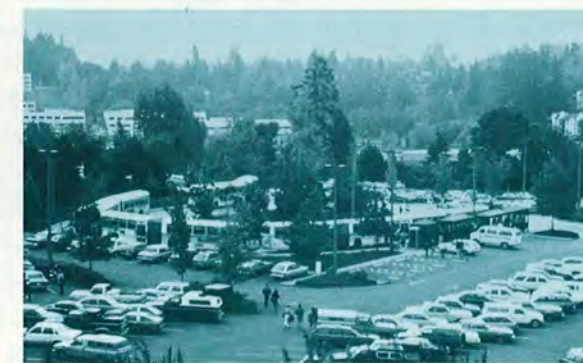
To maximize public access to the regional system, the RTA will fund a variety of community connection facilities including transit centers, transit access improvements, and park-and-ride lots. These facilities are intended to improve local access to the regional system while improving connections to local transit services.

The RTA intends to maximize the local benefits of these facilities by promoting designs and locations that encourage joint development and maximize pedestrian access. The RTA also intends to evaluate the degree to which these facilities reduce the need for people to drive. The objective of the evaluation will be to produce a mix of investments within the available budget which maximize public transportation benefits in the area around the proposed community connection facilities. The location, design and construction of these facilities will be determined through a collaborative process involving the public, local jurisdictions and local transit agencies.

Park-and-ride lots

Sound Move adds park-and-ride lot capacity in some areas to get the best performance out of the transit system while providing convenient access for transit customers. The demand for expanded park-and-ride lot capacity can be reduced if the RTA, local transit agencies, local jurisdictions and the public can successfully:

- encourage as many people as possible to reach the transit system using local transit or other HOV modes
- develop land-use policies that are transit- and pedestrian-friendly and encourage mixed-use development around transit stations
- encourage joint use and development of park-and-ride lots
- allow park-and-ride lots to be converted to other uses when transit- and pedestrian-friendly development patterns make the specific site inappropriate for continued park-and-ride use
- develop ways other than park-and-ride lots that are as efficient and effective in achieving ridership goals with less effect on the environment.



Keeping on track and within budget

Sound Move is based on extremely conservative cost and ridership assumptions and methodologies reviewed by an independent expert review panel appointed by the governor, the state Legislature and the state Transportation Department. In addition, the RTA has adopted strict cost management control principles to make certain Sound Move stays on schedule and within budget. Those principles include:

- hiring independent auditors and appointing a citizen oversight committee to monitor RTA performance and make sure the authority maintains full public accountability
- rewarding contractors for excellence and penalizing them for cost overruns or not completing projects on schedule
- using outside or independent professional "value" engineers to analyze preliminary designs and identify, wherever possible, less expensive ways of completing projects.

A community effort

Citizens played a key role in shaping the ten-year system plan and will play an even greater role in its implementation. Sound Move reflects the dynamic nature of our region. It therefore needs the ideas and collaboration of the region's diverse interests to put the many new transportation services and facilities in place.



The RTA will provide the resources and support necessary to involve the public at all levels of planning (local, corridor, regional) and during all phases of putting the plan in place (environmental, preliminary engineering, final design, construction, operation). The RTA will also support independent citizen and/or technical review committees to oversee and provide advice to the RTA during detailed electric light-rail segment planning.

One of the first tasks of a citizen committee for the north light-rail line will be to consider and to help identify an alternative northern route which can be evaluated against the preferred alternative during environmental review and preliminary engineering stages. At a minimum the evaluation will include performance criteria such as ridership, cost, cost-effectiveness, compatibility with local community plans, direct service to the University District, speed and capacity, and impacts to existing transportation capacity in the corridor. The time and resources devoted to the task of identifying an alternative northern route shall be established at the beginning of the citizen process.

Public involvement principles

The RTA will work with local public transportation agencies, local jurisdictions and agencies to create an open public involvement process with ample opportunities to inform and involve the community. Citizens and groups will have extensive opportunities to interact with, and receive a response from, appointed and elected officials on issues of interest or concern. The RTA will ensure that:

- citizens have access to the planning process
- citizens' input is actively sought at all stages of planning and development
- a representative cross-section of interests is engaged
- all programs and activities are publicized and the proceedings and records made available for public review
- citizens have opportunities to affect decisions before they are finalized
- citizens' inquiries, suggestions and ideas are answered or accounted for in the decision-making process.

The environmental process

A goal of the plan is to maximize the positive effects we can make on our region's economic, social and physical environments. The RTA will work with the community to carefully evaluate the short and long-term effects of implementing and operating Sound Move investments. Citizens will be involved in community-level environmental review of each facility as it is planned in greater detail. The RTA will fully comply with all federal, state and local environmental evaluation processes.

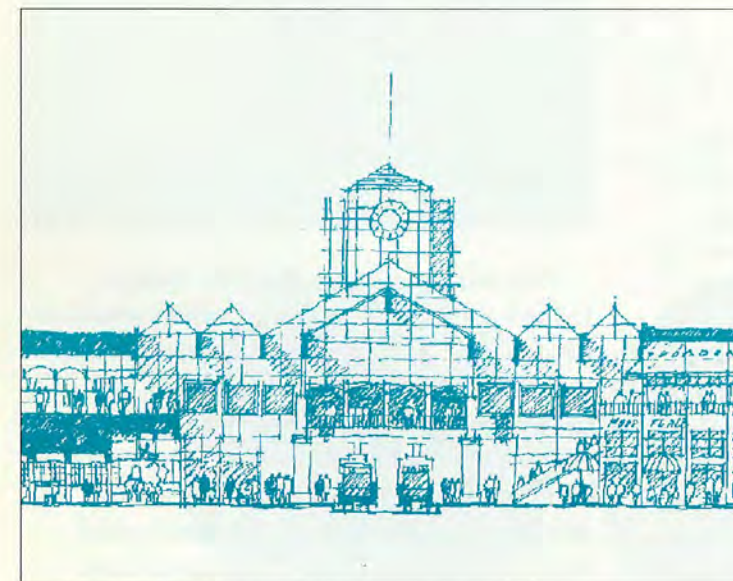
Paying for the system

RTA taxing and bonding authority

State law allows the RTA to ask voters in the Central Puget Sound region to increase their local taxes to pay for a regional HCT system. The law allows the RTA to ask voters within the RTA District for up to a 9/10 of one percent sales tax, 8/10 of one percent motor vehicle excise (license tab) tax, and an employer tax of \$2 per employee.

The financial plan assumes the local funding for Sound Move at less than 40 percent of the authorized level. Funds will come from a 4/10 of one percent increase in sales tax and a 3/10 of one percent increase in the license tab tax to be collected within the RTA District.

State law also allows the RTA to issue municipal bonds. The financial plan for Sound Move includes long-term bond financing at a level significantly lower than state law allows.



Financial plan framework

The proposal to be placed before the voters will be a ten-year construction plan financed in part by long-term bonds. As elements are completed, they will begin operating during that ten-year period. After the ten-year period, the RTA's tax revenues will be used to continue transit operations and pay for debt service. Any second phase capital program which continues local taxes for financing will require approval by a vote of those citizens within the RTA District.

The RTA is committed to building and operating a ten-year system plan that can be confidently funded and completed as promised to the region's citizens. To carry out this commitment, the RTA adopted the following guidelines for the financial plan:

- **local tax rates** — Sound Move will be funded in part by local revenues, generated within the RTA District boundaries, including a local sales tax increase not to exceed 4/10 of one percent and motor vehicle excise (license tab) tax increase not to exceed 3/10 of one percent.
- **state and federal program funding** — The RTA assumes no state funds, thus placing no additional demand on limited state resources that are needed for other regional transportation investments.

The RTA assumes federal funding for new rail starts of \$55 million per year and other federal funding sources of \$18 million per year. Additional funds will be requested but the plan does not speculate beyond current sound estimates of federal support.

- **conservative borrowing levels** — The RTA Board has established financial policies to ensure conservative use of long-term debt (bonding). Because transit facilities provide benefits over a long span of time, it is reasonable to finance their construction over a period that extends beyond the ten-year system plan construction timeframe.
- **subarea benefits** — The RTA is committed to invest revenues to benefit the areas where they are raised. The amount of long-term debt financing used to benefit each subarea will be based on its financing capacity (defined by revenues generated and ability to repay debt after covering operating expenses).
- **ten-year implementation** — Different parts and segments of the plan will be implemented in stages and be operational as soon as possible. The RTA is committed to the entire system being completed and operational within 10 years.

Costs and schedule

Table 1 summarizes the cost of putting Sound Move in place and operating regional express bus routes and rail lines. The costs associated with construction include markups to cover potential mitigation, engineering, administration, project management, insurance, and other overhead costs, as well as contingencies for unforeseen expenses. Operating and maintenance costs include overhead and administration expenses, and an operating reserve account equal to two months operating costs set aside for unexpected expenses.

Table 1. Costs

All figures in \$millions

HOV Expressway access ramps	\$377
Regional express bus	\$361
Commuter rail	\$669
Electric light rail	\$1,801
Community connections	\$255
Regional fund/reserves	\$280
Debt service	\$171
TOTAL	\$3,914

Table 2. Revenues

All figures in \$millions

Local taxes	\$1,980
Bonding	\$1,052
Federal	\$727
Farebox/other	\$155
TOTAL	\$3,914

The schedule for funding the system follows the general implementation schedule described in the "Putting the System in Place" section. Actual future cash flow will determine detailed scheduling priorities. The long-term cash flow analysis assumes that debt financing (bonds) will be necessary during the concentrated construction and implementation stages when capital costs alone exceed annual revenues.

Funding

The financial principles provide the foundation for determining what revenue sources should be relied upon to pay for Sound Move. The system plan will be paid for with a combination of voter approved local taxes, federal grants, farebox revenues, borrowed funds (bonds), and interest revenues (see Table 2). System operating costs beyond the ten-year implementation period will be paid for with local taxes, farebox revenues, interest earnings, private sources, and federal operating assistance.

Risk assessment

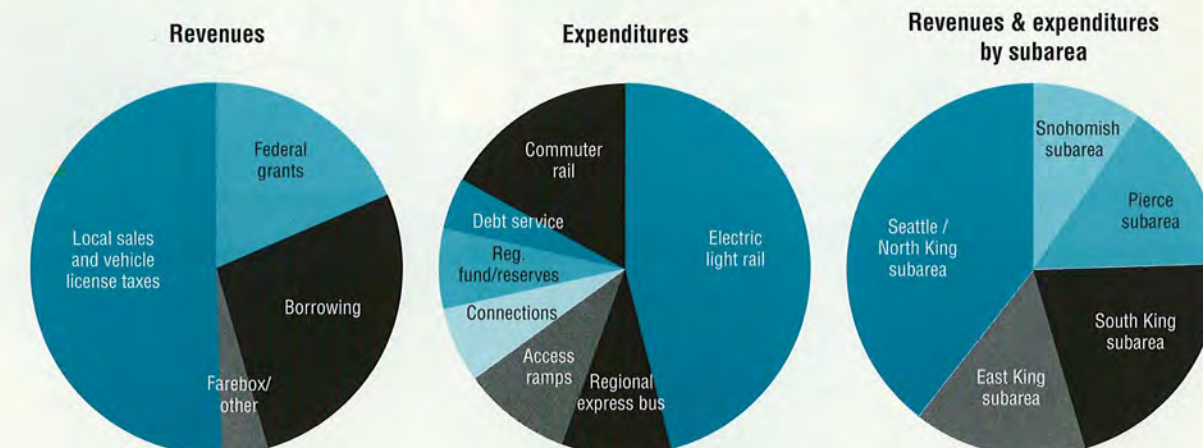
The assumptions used to project costs and revenues for Sound Move are consciously conservative. The assumptions have been carefully analyzed to provide a cushion in case there are adverse changes in one or more of the revenue or expense projections. Experience shows that if one assumption changes, other key indicators would likely change in a similar manner. For example, if inflation were to escalate projected costs, interest rates and earnings and tax revenues

would also be higher than plan projections. The RTA, however, has adopted several strategies within its financial policies to reduce the impact of any imbalance between planned expenditures and available revenues.

Financial policies

The financial policies provide important tools to the RTA to make sure that Sound Move is financed on time and within budget, and that principles and commitments to the public are met.

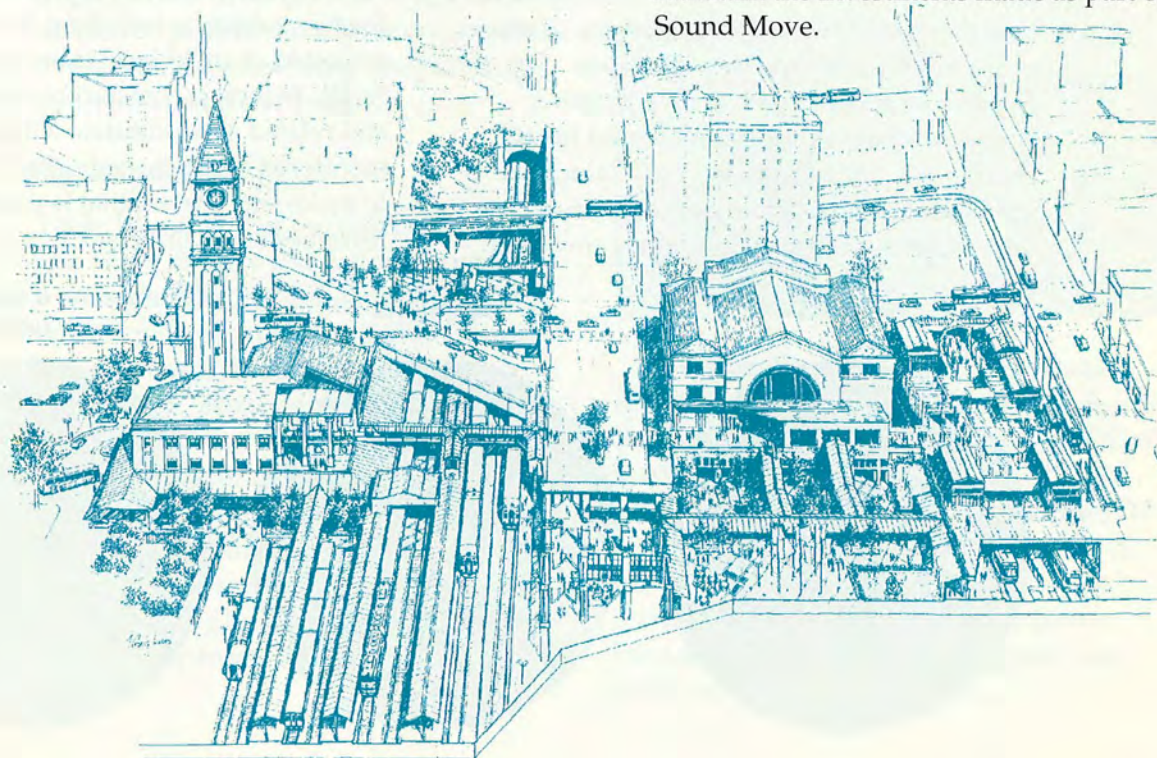
- **Distributing revenues equitably** — Since local tax revenues will be used to benefit the RTA District's five subareas based on the share of revenues each subarea generates, adopting this ten-year plan represents an equitable distribution of revenues and benefits. Budgets for each of the five subareas, including the subarea's projected share of local taxes, borrowed funds, federal grants, farebox revenues, and related expenditures, will be monitored and adjusted on an annual basis to make sure that equitable distributions of revenues are maintained.



- **Regional fund** — The regional fund will pay for systemwide elements of Sound Move. These elements include the integrated fare policy that creates a single-ticket ride, innovative technologies, and planning for any future capital investments that will be placed before the region's voters. The regional fund will also pay for RTA administration. The fund will be created with an equal percentage of local tax revenues contributed by each of the five subareas plus interest earnings.
- **Conservative borrowing levels** — The RTA is committed to placing limits on its use of long-term debt. It has adopted several policies to make sure this commitment is met. These policies establish the conservative approach the RTA will use to calculate the cash flow

available to service debt, set a debt service coverage ratio policy, and reserve a portion of the RTA's debt financing capacity to provide a future potential funding source for unforeseen circumstances.

- **Public accountability** — The RTA will hire independent auditors and appoint a citizen oversight committee to monitor RTA performance in carrying out its public commitments.
- **System expansion or tax rollback** — Any second phase capital program which continues local taxes for financing will require voter approved within the RTA District. If voters decide not to extend the system, the RTA will roll back the tax rate to a level sufficient to pay off the outstanding bonds and operate and maintain the investments made as part of Sound Move.



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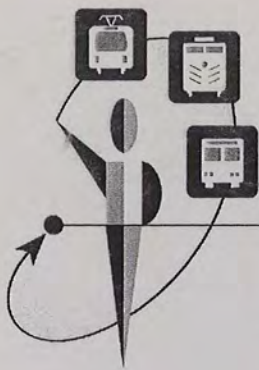
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Sound Move

**Launching a Rapid Transit System
for the Puget Sound Region**

*Appendix A: Detailed description of
facilities and costs*

The Ten-Year Regional Transit System Plan

As adopted May 31, 1996

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All figures in 1995 \$millions

Subarea project list summary

RTA's Revenue ¹	Expenditures	Capital	O&M	Total
Snohomish County —				
Taxes - \$257	Commuter rail	\$89	\$43	\$132
Federal - \$28	HOV access	49	-	49
Bonding - \$60	Regional express bus	10	46	56
Farebox - \$17	Community connections	96	-	96
	Debt service	-	7	7
Subtotal - \$362	Reserves	-	3	3
	Regional fund	7	12	19
		\$251	\$111	\$362
North King County —				
Taxes - \$581	Electric light rail	\$1,381	\$30	\$1,411
Federal - \$452	Contribution to commuter rail			
Bonding - \$503	and regional bus O&M	-	26	26
Farebox - \$23	Debt service	-	47	47
	Reserves	-	32	32
Subtotal - \$1,559	Regional fund	16	27	43
		\$1,397	\$162	\$1,559
South King County —				
Taxes - \$354	Electric light rail	\$315	\$10	\$325
Federal - \$163	Commuter rail	\$228	\$41	\$269
Bonding - \$284	HOV access	70	-	70
Farebox - \$28	Regional express bus	11	28	39
	Community connections	25	-	25
Subtotal - \$829	Debt service	-	56	56
	Reserves	-	18	18
	Regional fund	10	17	27
		\$659	\$170	\$829
East King County —				
Taxes - \$420	HOV access	\$258	-	\$258
Federal - \$45	Regional express bus	35	110	145
Bonding - \$69	Community connections	109	-	109
Farebox - \$33	Debt service	-	14	14
	Reserves	-	10	10
Subtotal - \$567	Regional fund	11	20	31
		\$413	\$154	\$567

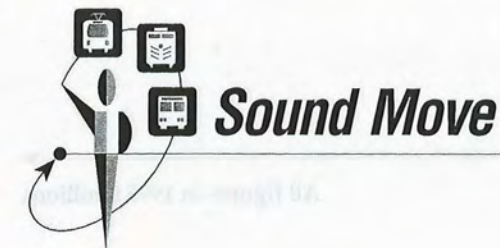
¹ 10 year time frame; 0.52% sales tax equivalent



All figures in 1995 \$millions

RTA's Revenue ¹	Expenditures	Capital	O&M	Total
Pierce County —				
Taxes - \$368	Electric light rail	\$50	\$15	\$65
Federal - \$39	Commuter rail	222	46	268
Bonding - \$136	Regional express bus	36	85	121
Farebox - \$32	Community connections	25	-	25
	Debt service	-	47	47
	Reserves	-	21	21
	Regional fund	10	18	28
Subtotal - \$575		\$343	\$232	\$575
Subarea Totals —				
Taxes - \$1,980	Electric light rail	\$1,746	\$55	\$1,801
Federal - \$727	Commuter rail	\$539	\$130	\$669
Bonding - \$1052	HOV access	\$377	-	\$377
Farebox - \$133	Regional express bus	\$92	\$269	\$361
	Community connections	\$255	-	\$255
	Debt Service	-	\$171	\$171
	Reserves	-	\$110	\$110
Subtotal - \$3,892		\$3,009	\$735	\$3,744
Regional Fund —				
Interest - \$22	Fare integration	-	\$45	\$45
	Research & technology	\$30	-	\$30
	Phase II planning/engineering	\$30	-	\$30
	RTA agency administration	-	\$55	\$55
	Systemwide contingency	-	\$10	\$10
		\$60	\$110	\$170
Total revenues and expenditures —				
Revenues - \$3,914	Expenditures -	\$3,069	\$845	\$3,914

¹ 10 year time frame; 0.52% sales tax equivalent



All figures in 1995 \$millions

Snohomish County

Revenues			
Taxes -	\$257		
Federal -	\$28		
Bonding -	\$60		
Farebox -	\$17		
Total -	\$362		
Project List			
	Capital	O&M	Combined
Commuter Rail —			
Everett to Seattle (track & facilities)	\$64	\$43	\$107
Everett Multimodal	\$12	-	\$12
Mukilteo Station	\$6	-	\$6
Edmonds Station	\$6	-	\$6
Bond St. Station (Everett)	\$1	-	\$1
Total -	\$89	\$43	\$132
HOV Access —			
I-5 @ 164th (Ash Way)	\$11	-	\$11
I-5 @ Lynnwood P&R	\$30	-	\$30
I-5 @ 112th (Silver Lake)	\$6	-	\$6
SR-525 @ 164th (Swamp Creek)	\$2	-	\$2
Total -	\$49	-	\$49
Regional Express Bus —			
Everett to Aurora Village: SR 99	\$3	\$11	\$14
Everett to Mountlake Terrace/ Seattle: I-5	\$4	\$21	\$25
S. Everett to Bellevue: SR 527 (Snohomish)	\$2	\$9	\$11
Lynnwood to Bellevue: I-405 (Snohomish)	\$1	\$5	\$6
Total -	\$10	\$46	\$56



All figures in 1995 \$millions

	Capital	O&M	Combined
Community Connections —			
Lynnwood Transit Center	\$15	-	\$15
Ash Way Park & Ride	\$2	-	\$2
Swamp Creek Park & Ride	\$6	-	\$6
Mountlake Terrace Flyer Stop	\$3	-	\$3
Lynnwood Transit Center - Park & Ride Connector	\$5	-	\$5
Pacific Avenue Overpass (Everett)	\$10	-	\$10
South Everett Transit Center	\$3	-	\$3
East Everett Park & Ride (formerly "Landfill")	\$15	-	\$15
North Everett Transit Center	\$1	-	\$1
Lynnwood Park & Ride enhancements	\$2	-	\$2
112th St. Park & Ride / Flyer Stop (Silver Lake)	\$14	-	\$14
Funds for other Projects	\$20	-	\$20
Total -	\$96	-	\$96
Debt service —	-	\$7	\$7
Reserves —	-	\$3	\$3
Regional fund —	\$7	\$12	\$19
Grand total —	\$251	\$111	\$362



All figures in 1995 \$millions

North King County

Revenues

Taxes -	\$581
Federal -	\$452
Bonding -	\$503
Farebox -	\$23
Total -	\$1,559

Project List

	Capital	O&M	Combined
Electric light-rail —			
North University District to Boeing Access Rd.	\$1,355	\$30	\$1,385
NE 45th Street Station			
Pacific Street Station			
Capitol Hill Station			
First Hill Station			
Convention Place Station			
Westlake Station,			
University Street Station			
Pioneer Square Station			
International District Station			
I-90/Rainier Station (Atlantic St.)			
McClellan Street Station			
Columbia City Station			
Othello Street Station			
Henderson Street Station			
Boeing Access Road Station			
North University District to Northgate (contribution pending additional funding)	\$26	-	\$26
Roosevelt Station			
Northgate Station			
Commuter rail —			
Richmond Beach Station	*		
Ballard Station	*		
Georgetown Station	*		
Contribution to commuter rail & regional bus O&M —	-	\$26	\$26
Debt service —	-	\$47	\$47
Reserves —	-	\$32	\$32
Regional fund —	\$16	\$27	\$43
Grand Total —	\$1,397	\$162	\$1,559

* Provisional station subject to funding availability

All figures in 1995 \$millions

South King County

Revenues

Taxes -	\$354
Federal -	\$163
Bonding -	\$284
Farebox -	\$28
Total -	\$829

Project List

	Capital	O&M	Combined
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Electric light rail —

Boeing Access Rd. to S. 200th St. (SeaTac)	\$315	\$10	\$325
Tukwila Station			
N. SeaTac Station (SR-518)			
Sea-Tac Airport Station			
SeaTac Station (S. 200th St.)			

Commuter Rail —

Seattle to Auburn (track & facilities)	\$179	\$41	\$220
King St. Station	\$11	-	\$11
Boeing Access Road Station (Tukwila)	\$10	-	\$10
Tukwila Station (Longacres)	\$13	-	\$13
Kent Station	\$6	-	\$6
Auburn Station	\$9	-	\$9
Total -	\$228	\$41	\$269

HOV Access —

I-5 @ 320th (Federal Way)	\$25	-	\$25
I-5@ 272nd (Federal Way)	\$27	-	\$27
I-405 @ Southcenter (Tukwila)	\$32	-	\$32
Total -	\$70	-	\$70

All figures in 1995 \$millions

	Capital	O&M	Combined
--	---------	-----	----------

Regional express bus —

Bellevue to SeaTac (south)	\$3	\$8	\$11
Federal Way to Bellevue (south)	\$2	\$3	\$5
Puyallup to Bellevue (south)	\$2	\$2	\$4
SeaTac to Seattle	\$3	\$8	\$11
Tacoma to Seattle (south)	\$1	\$7	\$8
Total -	\$11	\$28	\$39

Community connections —

Federal Way Transit Center/City Center	\$4	-	\$4
Star Lake or other Federal Way park-and-ride			
lot capacity improvements	\$16	-	\$16
Other Park-and-ride expansion	\$5	-	\$5
Total -	\$25	-	\$25

Debt Service —

	-	\$56	\$56
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Reserves —

	-	\$18	\$18
--	---	------	------

Regional fund —

	\$10	\$17	\$27
--	------	------	------

Grand Total —

	\$659	\$170	\$829
--	-------	-------	-------

All figures in 1995 \$millions

East King County

Revenues

Taxes -	\$420
Federal -	\$45
Bonding -	\$69
Farebox -	\$33
Total -	\$567

Project list

	Capital	O&M	Combined
--	---------	-----	----------

HOV access —

Kirkland I-405 HOV access improvements	\$84	-	\$84
I-405 @ Bellevue	\$66	-	\$66
I-405 @ Park Ave., (Renton)	\$32	-	\$32
I-405 @ Talbot Rd. (Renton)	\$31	-	\$31
I-90 @ Eastgate Park-and-ride	\$29	-	\$29
I-90 @ Sunset Interchange (HOV Share)	\$16	-	\$16
Total -	\$258	-	\$258

Regional express bus —

S. Everett to Bellevue: SR 527 (east)	\$2	\$4	\$6
Lynnwood to Bellevue: I-405 (east)	\$2	\$5	\$7
Woodinville to Northgate	\$4	\$10	\$14
Issaquah to Bellevue/Northgate	\$7	\$22	\$29
Redmond to Bellevue/Seattle	\$5	\$20	\$25
Redmond to Seattle: SR 520	\$4	\$3	\$7
Bellevue to SeaTac (east)	\$3	\$14	\$17
Redmond to U. District	\$4	\$13	\$17
Federal Way to Bellevue (east)	\$2	\$11	\$13
Puyallup to Bellevue (east)	\$2	\$8	\$10
Total -	\$35	\$110	\$145

All figures in 1995 \$millions

	Capital	O&M	Combined
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Community Connections —

Bellevue Transit Center	\$15	-	\$15
Bothell / Canyon Park flyer stop	\$5	-	\$5
Bothell Branch Campus Access @ 195th/I-405	\$5	-	\$5
Issaquah Transit Center	\$10	-	\$10
Kirkland Transit Center	\$10	-	\$10
Mercer Island Station/Park & Ride	\$10	-	\$10
Newcastle Transit Center	\$5	-	\$5
Willows HOV (Redmond)	\$5	-	\$5
Overlake Transit Center / Park & Ride (NE 40th)	\$5	-	\$5
Woodinville Arterial HOV Enhancements	\$5	-	\$5
Small cities transit access	\$3	-	\$3
Unincorporated King Co. Transit Access	\$5	-	\$5
I-90 two-way center roadway	\$15	-	\$15
SR-522 HOV enhance. (Woodinville to Bothell)	\$11	-	\$11
Total -	\$109	-	\$109

Debt service —

	-	\$14	\$14
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Reserves —

	-	\$10	\$10
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Regional fund —

	\$11	\$20	\$31
--	------	------	------

Grand Total —

	\$413	\$154	\$567
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All figures in 1995 \$millions

Pierce County

Revenues

Taxes -	\$368
Federal -	\$39
Bonding -	\$136
Farebox -	\$32
Total -	\$575

Project List

Capital	O&M	Combined
---------	-----	----------

Commuter Rail —

Auburn to Lakewood (track & facilities)	\$171	\$46	\$217
Sumner Station	\$5	-	\$5
Puyallup Station	\$9	-	\$9
Tacoma Dome Station	\$17	-	\$17
S. 56th St. Station	\$7	-	\$7
Lakewood Station	\$9	-	\$9
Lakewood CBD Rail Station connection	\$4	-	\$4
Total -	\$222	\$46	\$268

Electric Light-Rail —

Tacoma CBD/Waterfront to Tacoma Dome multi-modal Terminal	\$50	\$15	\$65
Total -	\$50	\$15	\$65

Regional Express Bus —

Puyallup to Bellevue: SR-167 (Pierce)	\$2	\$7	\$9
Tacoma to Seattle: I-5 (Pierce)	\$2	\$7	\$9
Tacoma to Seattle Express	\$12	\$28	\$40
Lakewood to Seattle Express	\$5	\$17	\$22
Tacoma Dome to Auburn: SR-167	\$2	\$5	\$7
South Hill to Dupont Express	\$5	\$4	\$9
Lakewood to Tacoma Express	\$3	\$8	\$11
Midcounty to Downtown Express	\$3	\$4	\$7
Lakewood to Puyallup Express	\$2	\$5	\$7
Total -	\$36	\$85	\$121

All figures in 1995 \$millions

Capital	O&M	Combined
---------	-----	----------

Community Connections —

Tacoma Dome Expansion	\$10	-	\$10
South Hill Park & Ride	\$5	-	\$5
Dupont Park & Ride	\$5	-	\$5
SR 512 Park & Ride Expansion	\$5	-	\$5
Total -	\$25	-	\$25

Debt service —

-	\$47	\$47
---	------	------

Reserves —

-	\$21	\$21
---	------	------

Regional fund —

\$10	\$18	\$28
------	------	------

Grand Total —

\$343	\$232	\$575
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Regional fund

Revenues

Local tax revenue, 7% contribution -	\$139
Interest earnings -	\$31
Total -	\$170

Project List

	Capital	O&M	Combined
Fare integration	-	\$45	\$45
Research & technology	\$30	-	\$30
Phase II planning / engineering	\$30	-	\$30
RTA agency administration	-	\$55	\$55
Systemwide contingency	-	\$10	\$10
Total -	\$60	\$110	\$170
Puyallup Station	\$9	-	\$9
Tacoma Dome Station	\$17	-	\$17
S. 36th St. Station	\$7	-	\$7
Lakewood Station	\$9	-	\$9
Lakewood CBD Rail Station connection	\$4	-	\$4
Total -	\$222	\$46	\$268
Electric Light-Rail -			
Tacoma CBD/Waterfront to Tacoma Dome multi-modal Terminal	\$50	\$15	\$65
Total -	\$50	\$15	\$65
Regional Express Bus -			
Puyallup to Bellevue SR-167 (Pierce)	\$2	\$7	\$9
Tacoma to Seattle I-5 (Pierce)	\$2	\$7	\$9
Tacoma to Seattle Express	\$12	\$28	\$40
Lakewood to Seattle Express	\$5	\$17	\$22
Tacoma Dome to Auburn SR-167	\$2	\$5	\$7
South Hill to Dupont Express	\$5	\$4	\$9
Lakewood to Tacoma Express	\$3	\$8	\$11
Midcounty to Downtown Express	\$3	\$4	\$7
Lakewood to Puyallup Express	\$2	\$5	\$7
Total -	\$36	\$83	\$121

Sound Move – the Regional Transit System Plan

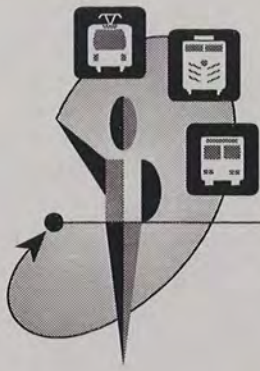
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Sound Move

**Launching a Rapid Transit System
for the Puget Sound Region**

Appendix B: Financial policies

The Ten-Year Regional Transit System Plan

As adopted May 31, 1996

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Introduction

Purpose

The RTA Board adopted an initial framework for the financing of Sound Move, by setting local tax rates, focusing on minimal debt financing, requiring conservative projections for federal and state funding, and establishing a definition by which equity will be measured. The Financial Policies reflect the RTA Board's policy intent for implementing the financial framework, for ensuring that the ten-year construction program is completed on time and within budget, and for providing the tools to the Board to appropriately manage toward and respond to future conditions.

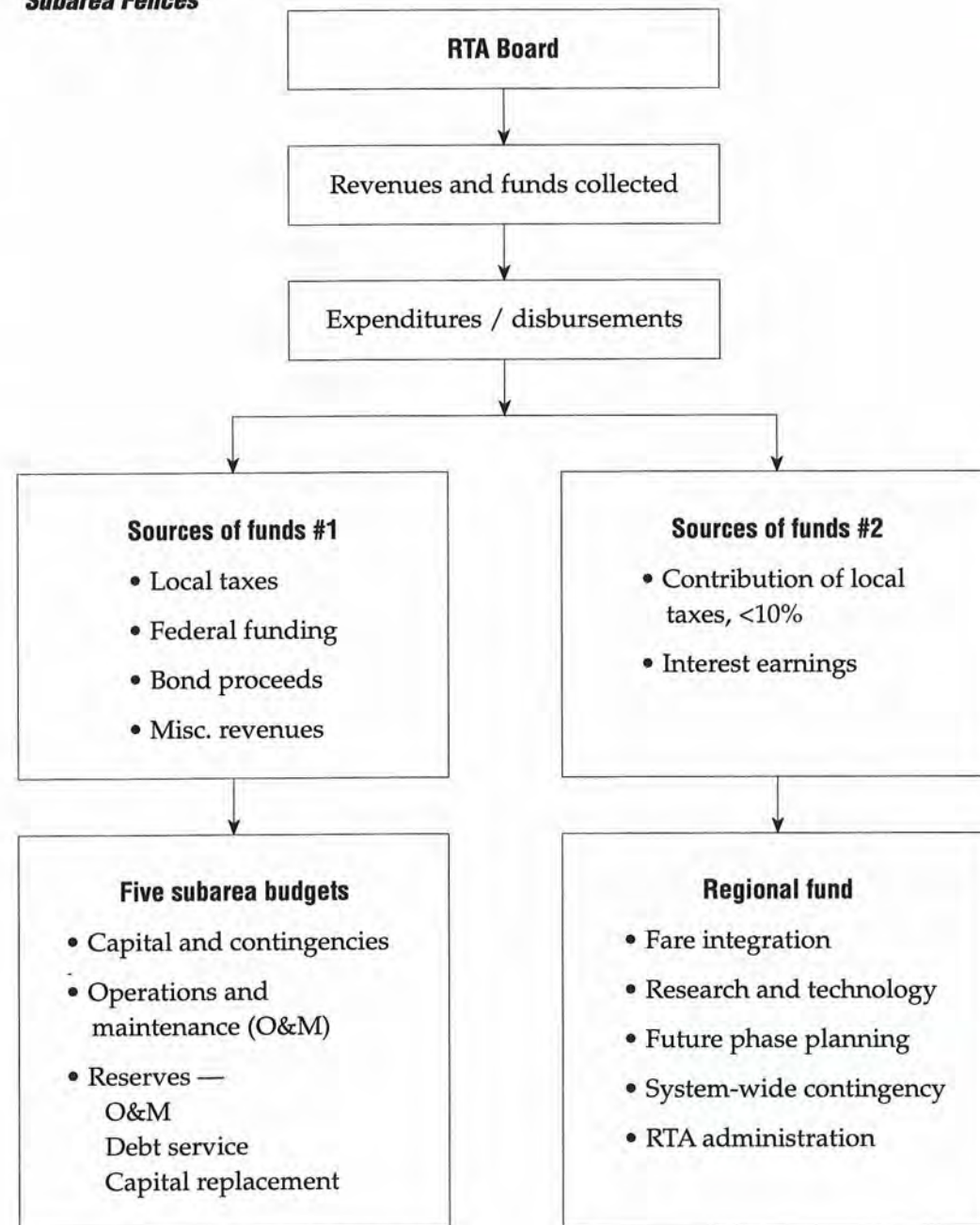
Legal responsibilities

In adopting these Financial Policies, the RTA Board recognizes certain legal responsibilities. Existing state law grants all legislative and policy authority to the RTA Board, and does not allow the Board to abrogate, transfer or delegate such authority to other agencies or to the five subareas within the RTA District. Consequently, all funds collected by or provided to the RTA, including local tax revenues, federal and other government grants, bond proceeds, fare box revenues, interest earnings, and private development revenues, may be disbursed only with approval of the RTA Board. Priorities for disbursements will be determined within the RTA's annual budgetary process, which by law requires a favorable vote by two-thirds of the RTA Board.

Similarly, the RTA Board recognizes that bonds issued by the RTA will be secured by a pledge of repayment through local taxes. When the bonds are issued, the RTA will enter a binding contract with its bondholders that requires a first claim against local tax revenues for repayment. Stated differently, bondholders will have a legal priority to the RTA's local tax revenues, above and beyond any commitment the RTA may wish to make with its subareas that no subarea will pay another subareas' debt. Therefore, these Financial Policies reflect the RTA's commitment to subarea equity while maintaining the flexibility necessary to manage the financing of the system plan on a consolidated basis and within legal constraints.

Financial Policies

"Subarea Fences"



Financial policies

Equity

Definition of equity

- a) Equity will be defined as utilizing local tax revenues and related debt for projects and services which benefit the subareas generally in proportion to the level of revenues each subarea generates. This equity principle will apply to the ten-year system plan as well as all future phases. The Financing Plan for Sound Move reflects this equity principle by providing a budget for each of the five RTA subareas, comprised of the subarea's share of local taxes, bonding capacity, farebox proceeds and an assumption for federal funding. The five subareas are defined as Snohomish County, North King County / Seattle, East King County, South King County, and Pierce County. While the Financing Plan will be managed by the RTA Board on a consolidated basis, the RTA will establish an accounting system by which to report individual subarea performance.
- b) The RTA Board agrees, therefore, that the facilities, projects and services identified in the adopted Ten-Year System Plan represent a reasonable definition of equity for purposes of satisfying both public policy concerns and statutory requirements. The subarea budgets will serve as the starting point for evaluating the equity principle during the ten year construction period.

Implementation policy

a) Subarea budgets:

1. The RTA Financing Plan will provide a budget for each of the five RTA subareas, comprised of the subarea's projected share of local taxes, bonding capacity and farebox proceeds, and an assumption for federal funding, and related expenditures.
2. Local taxes will be allocated to subarea budgets based on actual sales tax and motor vehicle excise tax receipts collected by subarea and within the RTA District. Annual RTA and subarea budgets will incorporate updated forecasts based on these actual receipts. A percent of local taxes from each subarea will be allocated to the Regional Fund to fund system-wide costs (see Regional Fund below).
3. Government funding will be allocated in two ways:
 - Government funding received that is general in scope for facilities and/or services that appear in several subareas will be allocated to subarea budgets proportional to the subareas' percentage share of total RTA local taxes collected and projected.
 - Government funding that is received for a specifically determined facility and/or service will be allocated to the subarea(s) which benefits from the facility and/or service
4. Miscellaneous revenues, such as those generated through private-public partnerships, advertising and terminal concessions, will be allocated to subarea budgets based on subarea investment in

the facility and/or service from which the revenue is generated. Because these revenue sources carry a high level of uncertainty, projections will not be included in the adopted Financing Plan or in the original subarea budgets.

5. Bonding capacity will be allocated based on a subarea's ability to repay the debt service after covering operating and maintenance costs, and consistent with the RTA's debt service coverage ratio policy (see Debt financing capacity below).
6. The subarea expenditures will be allocated in terms of the facilities and services to be provided, their projected costs and project contingencies, associated operating costs, debt service, and reserves for debt service, operations and maintenance, and capital replacement. The allocation of expenditures for facilities and services that cross subarea boundaries will be made by the RTA Board with consideration to subarea benefits and priorities.

b) Monitoring function:

1. The RTA will establish an accounting system by which to report performance against subarea budgets. This monitoring and reporting function will be incorporated into the RTA's annual budgeting process.
2. The RTA will establish an independent audit function to oversee its monitoring and reporting of subarea budgets.
3. The RTA will appoint a citizen oversight committee to monitor RTA performance (see Public accountability below).

c) Adjustments to subarea budgets:

1. The RTA will establish a process by which subarea budgets can be adjusted, based on current revenue and expenditure forecasts. Since the subarea budgets will be included within the RTA's general budget, adjustments to subarea budgets will occur every year as a step in the RTA's annual budget adoption, which requires a two-thirds favorable vote of the RTA Board. Adjustments to subarea budgets can include additional priority projects and/or services within that subarea should funding be available. This adjustment process recognizes that some fluctuation in revenues and expenditures against forecasts will occur
2. For those cases where a subarea's actual and projected expenditures exceed its actual and projected revenues and funding sources by 5 percent or greater, and/or where unforeseen circumstances occur which would result in an inability to substantially complete projects within such subarea's plan, the RTA Board shall take one or more of the following actions:
 - Correct the shortfall through use of such subarea's uncommitted funds and/or bond capacity which is available to the subarea; and/or
 - Scale back the subarea plan or projects within the plan to match a revised budget; and/or
 - Authorize a vote of the RTA District on a revised ballot measure.

Regional fund

Funding sources

The RTA will establish a regional fund that will be funded through a percent of local tax revenues contributed by each of the five subareas and interest earnings. The percent of local tax to be contributed will be set in the adopted Financing Plan, and then reviewed and set annually through the RTA budget process. It will not exceed ten percent per year during the ten-year system plan period.

Uses for regional fund

The regional fund will be used to fund system-wide elements. These elements include:

- a) The RTA's fare integration program.
- b) The RTA agency administration, including:
 - research and development of new technology;
 - planning and environment analysis for a future capital program.
- c) Contingencies that may occur due to shortfalls in actual revenues collected or funding obtained, and/or overruns in actual expenditures relative to cost estimates provided that the funding of such contingencies shall not diminish the RTA's ability to fully implement its fare integration program.

Debt financing capacity

Legal definition of RTA debt financing capacity

- a) The RTA's enabling legislation defines the RTA's capacity for issuing general obligation debt at one and one-half percent of the value of the taxable property within the boundaries of the RTA District (and with approval of three-fifths of voters voting with the RTA District, up to five percent of the value of the taxable property within the district's boundaries). There is no dollar limit for revenue indebtedness.
- b) However, through the following policies, the RTA will implement a substantially more conservative use of debt financing.

Calculation of debt financing capacity

The RTA recognizes that its future bondholders will hold first claim against its local sales tax and motor vehicle excise tax revenues as the pledged sources for repayment. However, the RTA's debt financing capacity will be calculated on a more conservative basis, by evaluating all revenues and deducted total operating expenses for net revenues available for debt service.

Debt service coverage ratio policy

- a) The RTA further recognizes the importance of a conservative debt service coverage ratio, both to insure a conservative use of debt and to secure favorable financing costs.

- b) For planning purposes, the RTA's debt service coverage ratio policy will be set at an average coverage ratio of 2.0x for net revenues over annual debt service costs, not to fall below 1.3x in any single year. Prior to bond issuance, the RTA will establish the appropriate debt service coverage ratio to incorporate into its bond covenants.

Uses of Debt Financing

- a) Debt financing in the context of the ten-year construction program covers two distinct types of borrowing, the first related to long term debt financing, and the second related to short term debt financing.
- b) Short term debt financing (with terms of ten years or less) is expected to be used primarily to bridge the gap between the necessary timing of expenditures and the anticipated receipt of revenues.
- c) The use of long term financing (with terms of more than ten years) is expected to be limited to capital and related costs for portions of the program that have a useful life in excess of the term of the debt. Long term financing should be preserved for those aspects of the program for which other sources of funds are not likely to be available (e.g., due to timing or eligibility constraints) or for which a local match is required to access such source of funds.

- d) The RTA will reserve a portion of its legal debt financing capacity to provide a potential funding source by which to address unforeseen circumstances. This reserve is defined at five percent of the capital costs reflected in the ten-year construction program.

Allocation of RTA debt capacity to subareas

- a) The amount of long-term debt financing used to benefit each of the subareas will be based on each subarea's ability to repay debt after covering operating costs.
- b) While the above policy prescribes the use of debt financing within subarea budgets, the RTA Board will manage the agency's debt capacity on a consolidated basis.

Debt management guidelines

The RTA Board has established, and will maintain, specific guidelines for managing the authority's debt use.

Setting priorities for expenditures

Based on the ten-year system plan, the RTA will develop a six year capital improvement budget, to be updated every two years as a step in the annual budgeting process and which will require adoption by a two-third favorable vote of the RTA Board. The RTA will establish guidelines for its budgeting process and criteria by which to establish priorities for expenditures.

Public accountability

To insure that the ten-year construction program development and implementation occurs within the framework and intent of these policies, the RTA will:

- a) Conduct an annual comprehensive performance audit through independent audit services;
- b) Appoint and maintain for the ten-year construction period a citizens' oversight committee, charged with an annual review of the RTA's performance audit and financial plan, for reporting and recommendations to the RTA Board.

Future phases

Voter approval requirement

The RTA Board recognizes its authority to fund Sound Move's future operations, maintenance and debt service as well as any future phase capital program through a continuation of the local taxes initially authorized by the voters. However, in its commitment to public accountability, the RTA

Board pledges that any second phase capital program which continues local taxes for financing will require approval by a vote of those citizens within the RTA District.

Sales tax rate rollback

Should voter approval for a future phase capital program not be forthcoming, the RTA Board will initiate two steps to roll back the rate of sales tax collected by the RTA.

- a) First, the RTA will first initiate an accelerated pay off schedule for any outstanding bonds. Second, the RTA will implement a tax rollback to a level necessary to pay the accelerated schedule for debt service on outstanding bonds, system operations and maintenance, fare integration, capital replacement, and agency cost.
- b) Once all debt is retired, the RTA will implement a tax rollback to a level necessary to pay for system operations and maintenance, fare integration, capital replacement and agency administration.

Financial policies review

These Financial Policies will apply to future capital programs. They will be reviewed for applicability prior to any submittal of a future capital program to the RTA District voters.

Sound Move — the Ten-Year Regional Transit System Plan

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Information presented in the ten-year system plan is provided by the RTA to inform citizens and may be reproduced freely.

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SOUNDTRANSIT



Sound Move

**Launching a Rapid Transit System
for the Puget Sound Region**

*Appendix C: Benefits, system use and
transportation impacts of Sound Move*

*The Ten-Year
Regional Transit
System Plan*

As adopted May 31, 1996

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Introduction

Voters in the central Puget Sound region are being asked to make a major financial investment in transportation improvements proposed in the Ten-year Regional Transit System Plan. This report provides the region's citizens with an assessment of various benefits the region can expect from this investment.

Transportation improvements are undeniably linked to the growth, development, quality of life and economic vitality of a region. Sound Move proposes a range of different types of transit improvements to improve mobility and provide a solid basis for meeting the anticipated growth in transportation demand in our region well into the 21st century. In investment terms, Sound Move proposes to expand and diversify our region's portfolio of transportation investments.

Since improved transportation is such an important part of maintaining the livability and vitality of the region — and because the RTA system plan offers a broader range of improvements than traditional transit plans (including HOV Expressways and region-wide transit system coordination) — this analysis goes a step beyond an ordinary approach to analyzing benefits.

Rather than simply looking at the narrow range of direct benefits that can be thoroughly documented or conservatively projected this report provides a broader discussion of community and regional benefits that can be expected from this investment.

As with road and highway construction, transit investments create value within a community that goes beyond where projects are built and how much concrete is poured. Personal mobility, regional connections, the availability of transportation alternatives, and impacts on the growth patterns, quality of life and the economic well-being of the region are all values that must be considered in deciding on a transit investment, as they traditionally are in decisions on road investments.

Table 1 shows many of the broader performance measures which can be difficult to quantify yet deserve consideration.

Only by considering these indirect benefits along with the traditional measures of transit improvements and their costs can the citizens of our region have the complete picture necessary to make an informed decision. Such consideration forces a look at the longer-term benefits and regional impacts of the proposed system, not just a limited look at the direct transportation benefits at the end of the 10-year construction period. Many of the benefits — such as development patterns or shifting travel patterns — will not be realized until well after the proposed system is in place and functioning.

Data and methodology used to analyze direct benefits of the transportation improvements in this proposal have been declared appropriate following rigorous scrutiny by an independent Expert Review Panel appointed by, and accountable to, the state of Washington. The entire contents of this report will be subject to Expert Review Panel review.

Table 1: Measures of performance by type

Transit measures	Other measures	
Transit ridership (e.g., passenger trips and boardings)	New businesses attracted to the region	Safety benefits of locating HOV in center of roadway
Additional transit passenger trips	Increased commercial activity	Increased connections between, and to/from regional economic centers
Time savings (to users)	Reduction in highway delay for private and commercial vehicles	Reducing or controlling sprawl into currently undeveloped, natural areas
Value of travel time savings benefit (to users)	Construction and related employment	Property value in areas near transit investment
Subsidy per passenger trip and per passenger mile	Increased rail freight mobility	Enhancing the pedestrian environment and allowing more trips to be made without car
Farebox recovery ratios (OR/OE)	Attaining Commute Trip Reduction Act goals	Increased opportunities for local mobility due to reallocation of bus service
Transit system productivity	Transportation benefits during special events (reduced parking, reduced congestion, travel time savings)	
Vehicle miles reduced	Vehicle operating and cost savings	
	Tourist spending	
Improvements in transit system reliability	Reduced parking demand (and value of parking costs saved)	

Benefits of RTA investments in the regional transit system

Background

The three-county district represented by RTA has been studying ways to increase transportation capacity for several years, because:

- population, employment and travel growth have strained our existing highways and arterials to capacity
- future growth will make congestion worse — congestion and delays will spread to more hours and more roads each day
- due to cost, environmental impacts, community opposition and lack of available right-of-way and funding, new highway construction is unlikely within the RTA District
- the existing bus system is largely stuck in the same traffic jams as private vehicles, so the RTA wants to extend exclusive and semi-exclusive rights-of-way to new transit services that have very high capacity, and at the same time benefit many existing bus routes
- transit's capacity potential is very great, for example: a light-rail line can provide the same peak-hour people-moving capacity as a 12-lane highway at only 25 percent to 33 percent of the cost, and in a much narrower space
- unlike most other metropolitan areas, the central Puget Sound region has its travel channeled into only a few major corridors by the same hills, mountains and water that make this such a desirable place to live. These constraints make transportation solutions relatively more expensive than in many other parts of the U.S.

Transit passenger trips

There are about 2.5 million persons living in 1.1 million households within the RTA District. **Table 2** shows the intentionally conservative estimates for daily and annual ridership for Sound Move. These estimates include only those transit riders using regularly scheduled, regular fare bus and rail lines within the RTA District boundary (dial-a-ride, subscription bus, school bus, etc. are excluded).

The Transportation System Management (TSM) forecast reflects transit ridership growth due to population and employment increases, completion of the state Transportation Department's core HOV system and those transit service increases that can be paid for within existing transit agency tax sources. The TSM alternative was originally studied along with the RTA's 1995 Phase I transit proposal and was presented in the *Regional Transit System Master Plan Technical Appendix* (February, 1995). The methods and data used in this TSM forecast are completely consistent with the current RTA ten-year system plan analysis. Although on a broad basis the TSM alternative is consistent with the six-year plans of local transit agencies, it is not intended to specifically represent those plans since they do not cover the period through year 2010.

Highlight:

About 258,000 trips are made each day on the fixed-route transit system in the Puget Sound Region. If all of those trips were instead made in single-occupant vehicles it would create a line of cars almost 650 miles long. The year 2010 daily transit ridership represents a line of cars more than 950 miles long.

Definitions:

- **Boardings** — Transit boardings represent the number of times a passenger steps into any transit vehicle.
- **Passenger trips** (or transit trips) — Trips represent the complete journey made by a person from an origin to a destination (such as home to work). Because people may transfer from one route to another to complete such a journey, trips can consist of more than one transit boarding.

- **Transfers** — Transfers are the movement of passengers between vehicles and routes to complete their trips. Transfers explain why the average transit trip consists of more than one boarding, and are a good measure of how well integrated the individual routes making up a transit system are.

Transfer rates are an indication of how the individual elements of a transit system complement each other. Nationwide, and indeed worldwide, higher transfer rates are strongly and positively correlated to higher transit ridership.

- **Passenger miles** — Passenger miles are a measure of service that a transit line or route is providing to its customers. It is a function of the average length of a trip made by passengers. For example, 100 passengers traveling ten miles each result in 1,000 passenger miles. Likewise, it would take 500 people to travel the same 1,000 passenger miles if their average trip length was only two miles.

Table 2: Ten-year total transit trips

	Existing	2010 TSM (previously studied)	2010 RTA forecast	Forecast with incremental Commute Trip Reduction ridership
Daily transit trips*	258,000	323,000	389,000	439,000
Percent change from existing	N/A	+25%	+ 51%	+ 70%
Daily transit boardings	335,000	428,000	555,000	625,000
Annual transit trips	75 million	98 million	117 million	131 million
Annual transit boardings	98 million	130 million	167 million	187 million
Transfer rate	1.3	1.32	1.43	1.43

* Transit trips and boardings included here apply only to the fixed-route, scheduled-service parts of the transit system. Demand-responsive, school bus, custom / subscription bus and van services are excluded.

Highlight:

It's claimed that transit carries a relatively small portion of all trips in the region: depending on how "trips" are counted between 3 and 8 percent.

But, the same could be claimed about the regional highway system. After five decades and many billions of dollars of investment, the region's interstate highway system (I-5, I-90 and I-405) carries only about 10 percent of all trips.

The bottom line is that the region's economy needs a balanced, well-functioning transportation system — including roads and transit — to remain competitive.

Forecast methods

The RTA's forecasts are based on:

- a thoroughly documented modeling/ forecasting methodology developed over a five-year period, and specifically designed to avoid the systematic biases which contributed to over-forecasts of transit ridership in other parts of the country during the 1980s
- a methodology reviewed by the state's independent Expert Review Panel, appointed to ensure that RTA methods are reasonable and comply with commonly accepted engineering, forecasting and planning practices
- adopted regional population and employment forecasts.

The transit ridership evaluated throughout the remainder of this report is based on the formal ten-year forecast, and excludes the presumption that transit could serve a larger share of the transportation market due to people shifting travel modes because of the Commute Trip Reduction Act. The impacts of CTR are outside the RTA's formal travel demand forecasting process. The ridership also excludes the success of cities and counties in achieving state Growth Management Act goals and ridership beyond the 2010 horizon.

The forecasts of HOV ramp use and benefits come from a recent state Transportation Department technical report.

Highlight:

A recent study by the Federal Transit Administration concluded that the annual local, state and federal subsidies to the transit system in Washington, DC returns \$3.2 billion in measurable benefits each year. These benefits include congestion relief, times savings for individuals and freight, and transportation cost savings for households near transit stations.

The 2010 ten-year transit ridership forecast includes the effects of population and employment growth, the effects of transit improvements (including reinvesting local bus service made available by the regional express routes), the six-year plans of the transit operators within the RTA District and completion of the HOV lanes in the three-county area. The forecast reflects putting in place a ten-year transit system plan, including:

- twenty regional express bus routes,
- twelve HOV ramps providing direct access to center HOV lanes, serving:
 - the RTA's new regional express bus routes,
 - existing services provided by Community Transit, Everett Transit, Pierce Transit and King County-Metro,
 - carpools and vanpools
- a commuter rail line from Everett to Lakewood,
- a light-rail line in Seattle from 45th Street to S. 200th Street via Sea-Tac Airport, and
- a light-rail line in Tacoma from 9th Street to the Tacoma Dome commuter rail station.

Table 3: Travel time savings by mode

	Carpools and vanpools	Bus riders	Rail riders	Total
Daily Time Savings (minutes)	380,000	350,000	1,050,000	1,780,000
Annual Time Savings (million hours)	1.6	1.5	5.1	8.2
Annual Value of Savings (millions of 1995 \$)	\$19.2	\$18.0	\$61.2	\$98.4

Highlight:

The estimates in this report represent the transit ridership on average weekdays and, in the case of annual values, include average weekends. If the RTA investment does even a moderately better job of serving special events, this would add another two million trips per year.

Table 4: Summary of transit boardings

	Weekday boardings	Annual boardings
Light rail	107,000	32.6 million
Commuter rail	12,600	3.2 million
Regional express bus	54,000	15.8 million
Total	173,600	51.6 million

Travel time savings

Table 3 illustrates the combined travel time savings for the region achieved by the investments included in Sound Move.

The value of the *time savings alone* that result from the efficiencies inherent in the RTA transit system improvements amount to \$32 per year for every person living in the RTA District in the year 2010.

Table 5: Travel times and number of transfers between selected centers
PM peak-period travel times (includes time on vehicle plus transfer time)

Origin center	Trip	Existing bus	2010 RTA	RTA time savings
Snohomish County	Everett to downtown Seattle	131 ¹	60	71
	Everett to downtown Seattle to Kent	203 ²	85 ³	118
North King County	Downtown Seattle to Columbia City	29	13	16
	Downtown Seattle to Puyallup	84 ¹	54	30
	Downtown Seattle to Everett	75	67	8
	Downtown Seattle to Capitol Hill	16	5	11
South King County	Auburn to Tacoma Dome	80 ¹	21	59
	Kent to Columbia City	66 ¹	30 ³	36
	Renton to Federal Way	78	47	31
East King County	Bellevue to Federal Way	101 ¹	64	37
	Bellevue to Sea-Tac Airport	78	49	29
	Canyon Park to Bellevue	61 ¹	26	35
Pierce County	Puyallup to downtown Seattle	108 ¹	54	54
	Downtown Tacoma to downtown Seattle	58	58	0
	Lakewood P&R to Auburn	70 ¹	38	32

¹ This trip requires a transfer between bus routes. ² This trip requires two transfers between bus routes.

³ This trip would require a transfer between rail lines (at some times of the day).

Transit ridership on RTA routes

Table 4 summarizes the average weekday light rail, commuter rail, and regional bus boardings for 2010, assuming Sound Move is completed.

After the ten-year plan is completed, 44 percent of all transit passengers in the region will make all or part of their trips using an RTA service.

Travel time and number of transfers between selected centers

Comparing travel times for two different transit systems is a deceptively simple-sounding way of evaluating the value of a transit investment — especially when the two systems are very different. Such a comparison is affected by the introduction of an HOV expressway system, electric light rail, and commuter rail. These new elements, paired with fare integration, will significantly change the way many people make their transit trips in the future. In reality, it is exceedingly difficult to fairly express the relative advantages and disadvantages of each system strictly using tables. However, for consistency with previous planning, **Table 5** compares existing transit travel to future transit travel times on RTA services.

Transit impact by major corridor

Table 6 shows the portion of all travel through the region's major highway corridors that will be carried in transit vehicles during rush hours.

Highlight:

The region is in the process of developing and implementing strategies for achieving state Commute Trip Reduction Act goals — a 35 percent reduction of "vehicle miles of travel" consumed by workers traveling to/from major employment sites during peak hours.

To the extent that the RTA program can provide an alternative way to meet this aggressive goal (rather than forcing employers to find their own solutions) the daily and annual transit ridership could be as high as 439,000 and 131 million, respectively. This represents a 70 percent increase over today's ridership levels.

Table 6: Peak transit share of all travel, by corridor, 2010*

Corridor	Share of all trips made in carpool, vanpool, bus or train
I-5 North	40 percent
I-5 South	40 percent
I-5/Pierce County	25 percent
Cross lake	30 percent
I-405 North	30 percent
I-405 South	30 percent

* These numbers illustrate the importance of transit in the major corridors at the most congested times of the day.

Additional ridership benefits, not included in the Table 6, may be expected from travel to and from special events. Rail transit has proven more attractive than expected for single site, high-traffic special events. This includes sporting events and other high-attendance public events.

The Tacoma Dome, the Kingdome, the new baseball stadium at the south end of Seattle's downtown, the Puyallup Fairgrounds, the Bellevue Convention Center, the Washington State Convention & Trade Center and the University of Washington are all within walking distance of major transit stations included in Sound Move. While this region is perhaps less familiar with transit's effectiveness in mitigating traffic associated with these types of events, other regions have found transit to be essential in delivering significant percentages of event attendees without the serious congestion and parking impacts experienced here.

Transit trips to selected centers

Table 7 presents the percentage of work and college trips made by transit riders to a set of selected regional centers. This 1990 data is from the U.S. Census Journey-to-Work survey compiled by the Puget Sound Regional Council (PSRC).

Percentages include ridership on fixed route, fixed schedule transit service. Excluded are paratransit, dial-a-ride, carpools/vanpools, etc. The range shown for future transit mode shares comes from two sources. The low end of the range comes from the RTA's own conservative forecasting for the year 2010. The high end of the range comes from the PSRC's recent travel demand forecasting supporting its Metropolitan Transportation Plan (MTP). The MTP is an update of the transportation element of Vision 2020, the region's adopted growth strategy.

Table 7: Activity center mode splits

Percentage of work and college trips by transit

Center	1990 transit %	Range of future transit %
Downtown Everett	2%	5% to 30%
Northgate	7%	8% to 16%
University District	18%	22% to 52%
Downtown Bellevue	5%	7% to 47%
Downtown Seattle	34%	45% to 60%
Downtown Tacoma	3%	6% to 37%
Average	13%	17% to 45%

The values shown are for PSRC's preferred implementation strategy (Note: these are year 2020 projections). Results for the other PSRC strategies would be in the range shown. The transit mode shares projected by the PSRC are significantly higher in part because their forecasts are not constrained by FTA guidelines in the same way as the RTA's. This is particularly true when looking at the effect of a regional rail system on land use and regional policies to reduce both congestion and vehicle emissions. The PSRC makes a deliberate effort to forecast these effects.

Benefits in addition to transit ridership of Sound Move

The RTA believes that only a broader interpretation of transit system benefits can account for the new transit systems (and the popularity of those systems) in the following west coast cities:

- San Diego, CA
- Los Angeles, CA
- San Jose, CA
- San Francisco, CA
- Sacramento, CA
- Portland, OR
- Vancouver, BC

As an example, Tri-Met in Portland concluded that "Investment in new development adjacent to MAX already exceeds the cost of the project by fivefold."

Highlight:

If the RTA investment in bus service, rail systems and HOV direct access ramps affects the regional economy sufficiently to increase personal income by as little as one-tenth of one percent (.001), that increase can be conservatively estimated to be \$85 million per year.

If the RTA's economic benefit increased employment one-half of one percent (.005), that increase would be worth \$425 million each year.

This increase represents only personal income, and excludes any additional affect on regional commercial activity.

Table 8 presents the varied benefit measures benefit with an estimated dollar range for each. The value ranges might be compared, for example, to the ten-year system plan cost per year of approximately \$200 million (in local tax dollars). The variety of benefits is wide and far-reaching.

Table 8b presents a wide range of additional measures which are worthy of consideration when evaluating a regional transit investment. These measures are either more qualitative in nature or difficult to quantify. For that reason, the RTA has not made a formal dollar-value estimate of the benefits. Nonetheless, these measures bring up significant potential benefits worthy of additional public discussion and research.

In addition to the number of riders and the associated costs, there are many other aspects of Sound Move that deserve attention. These issues are presented as questions and answers in **Table 9**.

Table 8: Annual value of regional benefits from investing in Sound Move

Measures	Low-range estimate (\$M/yr)	Mid-range estimate (\$M/yr)	High-range estimate (\$M/yr)
Travel time savings for system users	78	98	118
Parking cost savings for system users	10	13	16
Reduction in vehicle miles traveled (auto operating cost savings)	15	19	23
Travel time savings for drivers of private vehicles	16	20	24
Reduction in required employer-provided parking	12	14	17
Increased mobility for commercial vehicles	11	13	16
Construction and related employment	64	80	96
Increased property value in areas near transit stations	Under study	Under study	Under study
Bus service replaced by RTA, available for reinvestment	20	25	30
Improvements in transit system reliability	5	7	9
Total	231	289	349

The values shown are for PSRC's preferred implementation strategy (Note: these are year 2020 projections). Results for the other PSRC strategies would be in the range shown. The transit mode shares projected by the PSRC are significantly higher in part because their forecasts are not constrained by FTA guidelines in the same way as the RTA's. This is particularly true when looking at the effect of a regional rail system on land use and regional policies to reduce both congestion and vehicle emissions. The PSRC makes a deliberate effort to forecast these effects.

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Total	231	289	349

Table 8b: Additional measures of regional benefits worthy of consideration (and further research)

Increased commercial activity from new businesses attracted to the region due to improved transportation

Value of retaining existing employers in the region due to transportation improvements

Increased rail freight mobility

Aid to the region's employers in achieving the Commute Trip Reduction Act goals

Transportation benefits (reduced parking, congestion, and travel time savings) of transit carrying a higher share of trips to special events

Vehicle ownership and insurance savings

Increased tourist expenditures

Air quality and other health benefits

Safety benefits of locating HOV lanes in center of road

Increased connections between and to/from regional economic centers

Reduction or control of suburban sprawl into currently undeveloped, natural areas

Enhanced pedestrian environment allowing more people to engage in activities without a car

Improvements in road system reliability

Increased opportunities for local mobility due to reinvestment of bus service

New people-moving capacity in the region's most congested corridors

Preservation of transit travel times via dedicated ROW, while roads become more congested

Integrating the four-operator, multi-county transit fare systems

Improving transit as a travel option for both "choice" and "dependent" riders during a period in which the region's roads become more congested

Table 9: Other issues related to benefits of Sound Move

Questions	Answers
Is the RTA Ten-Year System Plan part of a comprehensive approach to regional mobility?	Yes — the RTA ten-year system plan is consistent with the region's adopted Metropolitan Transportation Plan, and puts in place a large part of the transit component of that plan.
Will the RTA Plan improve transit travel times in the region's congested corridors?	Yes — the bus, HOV and rail investments improve travel times in all major corridors, especially compared to future congested speeds. Because much more of the transit system will operate in protected rights-of-way, transit speeds and travel times will be preserved at the same as the roadway system becomes much more congested and auto travel gets slower.
Will the RTA plan provide additional capacity in congested corridors?	Yes — the plan significantly increases people-moving capacity in all major, congested corridors.
Are the new RTA services and facilities being integrated into the existing transit system and fare structure?	Yes — the plan enriches the existing network of express bus routes, enhances service coordination at rail stations and new transit centers, and provides significant new funding for fare integration. The RTA plan allows the local bus operators to reinvest 400,000 hours of bus service each year.
Is the RTA plan part of an integrated regional growth management strategy?	Yes — a "high-capacity transportation" system has always been regarded as essential to the success of growth management in this region.
Does the RTA serve major centers of economic activity? Does it improve access to jobs?	Yes — RTA services (bus and rail) will connect centers with over 700,000 jobs. All major special events locations are connected by RTA services.
Does the RTA plan improve access to opportunities and activities, for individuals facing special challenges to their mobility?	Yes — all RTA services and stations will be fully accessible to people with disabilities. All major employment and special event locations will be served by the RTA. The regional express bus system also includes supplemental ADA funding.

Benefits of RTA investments in the HOV Expressway system and regional express bus service

The state Transportation Department's Office of Urban Mobility has estimated that the direct access HOV ramps included in the RTA ten-year plan will serve slightly more than 200,000 people on an average day. Forty-two percent of these trips will be on buses — to a great extent the RTA's regional express bus routes — with the remainder in carpools and vanpools.

The HOV Expressway system will also offer significant time saving advantages for both carpool and vanpool users and passengers on the region's bus systems. **Table 10** shows benefits achieved through the HOV Expressway investments.

The HOV Expressway system, the bus services that will use that system, and the person trips served will benefit nonusers as well. Vehicle trips made in the HOV Expressway segments — including those made by express buses — will be removed

Highlight:

One full 40-foot bus is equivalent to a line of cars stretching

- *six city blocks, if traffic is moving at 25 m.p.h., or*
- *4.5 city blocks if traffic is moving at 15 m.p.h..*

from general purpose traffic lanes, freeing up capacity on the region's highways. As capacity shifts, general purpose vehicle speeds will increase, making for faster trips for both personal trips and commercial vehicles. Some people will shift their travel modes to take advantage of the attractive, competitive alternative to the car offered by the HOV Expressway system, further increasing travel time advantages for general purpose traffic. **Table 11** summarizes these travel time benefits.

Table 10: Travel time savings for HOV Expressway system users

	Carpools and vanpools*	Bus passengers	Total for RTA ten-year plan
Daily time savings (min.)	380,000	350,000	730,000
Annual time savings (mil. of hours)	1.6	1.5	3.1
Annual value of savings (mil. of 1995 \$)	\$19.2	\$18.0	\$37.2

* Though included here, carpool and vanpool users are not counted in the transit ridership discussed throughout this appendix.

As individuals switch to carpools, vanpools and buses from single-occupant vehicles, and as time savings accrue for all highway system users — and as these benefits spread out to vehicles on arterials and local roads — there will be regional economic benefits that can be estimated. These benefits included reduced operating costs for automobiles. These benefits are summarized in **Table 12**.

As people experience travel time savings moving around the region, and as some find improved, faster transit to be an attractive option to their private auto, employers will also benefit. **Table 13** summarizes just one of these benefits — reduced employer-provided parking.

Table 11: Peak-period travel time savings for drivers

Peak vehicle-miles reduced per day	300,000
Daily reduction in peak-period delays (person hours)	6,700
Annual reduction in peak-period delays (millions of person hours)	1.7
Annual value of savings	\$20 million

Table 12: Auto operating cost savings

	Mode shift savings
Annual vehicle miles of travel	125 million
Auto operating cost savings	\$19 million
Parking cost savings	\$13 million
Total savings	\$32 million

Table 13: Benefits to employers

Reduction in demand for employer-provided parking spaces	14,000
Annual cost per parking place	\$1000
Savings	\$14 million

Benefits of RTA investments to the HOV Expressway system and regional express bus service

Additional benefits of the HOV Expressway system

Developing an HOV Expressway will have several important regional benefits, including:

- **Connecting regional economic centers —** The RTA will connect many of the region's vital economic centers. While many will be connected by the electric-light rail and commuter rail systems, an even larger number will be connected by an HOV system significantly enhanced by the RTA's investment. Regional economic centers receiving direct benefit of the HOV Expressway system and the express bus route services are listed in **Table 14**. The centers shown will be connected to all others via bus routes using the HOV Expressway system.
- **Reliability of the regional bus system —** It is difficult to forecast and place a dollar value on the improved transit and HOV system reliability that the HOV Expressway system will create. Since the current HOV system isn't continuous, and direct access to the lanes is rare, vehicles that might otherwise make their entire trip in an HOV lane actually make a large portion of that trip in general purpose lanes. This means that for significant parts of their journeys, buses and HOVs are subject to the delays, breakdowns and gridlock common on the region's highways. The HOV Expressway system, along with completion of the HOV core

Table 14: Centers connected via bus routes using HOV Expressway

Economic center	Center employment (2010)
Auburn	10,000
Bellevue	58,000
Dupont	7,000
Eastgate	10,000
Everett	35,000
Federal Way	18,000
Issaquah	8,000
Kent	21,000
Kirkland	8,000
Lakewood	5,000
Lynnwood	18,000
Overlake	27,000
Puyallup	8,000
Redmond	11,000
Renton	35,000
Seattle	209,000
Sumner	6,000
Tacoma	51,000
SeaTac	26,000
Tukwila	26,000
Totem Lake	10,000
Northgate	14,000
Bothell	9,000
University District	19,000
Total	650,000

Benefits of RTA investments in commuter-rail and electric light rail

lanes by the state, will create a seamless system of exclusive transit/HOV rights-of-way, where HOV's can get out of the congestion caused by general purpose traffic. The potential improvement to bus service is so dramatic that completing the HOV system has been a major goal of the region's transit operators for a decade.

- **Safety effects of direct access to HOV lanes —** Changing lanes ranks among the most hazardous vehicle movement on a highway. The RTA's direct access ramp elements will eliminate, to a great extent, the current system's indirect access to the "wrong" side of the freeway which forces buses and HOVs to weave through traffic to get to HOV lanes. The ramps will also help eliminate the multiple unsafe lane changes to get on and off the highway. While reduced accidents, and the cost of those accidents can't be forecast, it is nonetheless a direct benefit of the RTA's investment. The value of this safety benefit would be difficult to overstate. While difficult to quantify, the safety aspect of the direct access ramps will make a real difference in the lives of the approximately 200,000 people who will use them on an average day. These people will not have to experience four to six lane changes each that it commonly takes to reach and then exit the center HOV lanes.

Highlight:

Based on US Dept. of Energy data, American Public Transit Association estimates the fuel efficiency comparisons of public transit compared to the average car to be:

- *one bus with seven passengers is equivalent to one car*
- *one full bus equals six cars*

Using the regional express bus routes

The regional express bus routes would typically operate in an express mode. Most of them would operate frequently (every 15 minutes during rush hours), and would operate all day, every day.

The total annual ridership on these routes is **15.8 million**. The average weekday boardings total 54,000. In addition to the ridership on these routes, the RTA transit investments free up hours of bus service for reinvestment in local routes. The RTA and local bus operators would work together to determine the locations of these reinvestments after RTA services are in place. The potential ridership gains from these additional local bus services are substantial. Assuming that the reinvested bus service is equal in productivity to the present Pierce Transit local routes and King County-Metro suburban routes, the estimated 400,000 hours of service would carry approximately six million additional riders per year.

Regional express bus route ridership, by route

The bus routes shown in Sound Move are an example of a regional express bus system that responds to each subarea's priorities. These routes were defined with enough detail to estimate costs and ridership for final plan adoption, but the routes will be refined as they are put in place. The community involvement process, and subarea priorities at the time the routes are implemented will affect the way the actual routes are initiated. For this reason, the detailed ridership forecasts simply illustrate the general service plan. It is essential to have flexibility when developing the scope and schedules of new regional express bus services so that the routes can respond to actual customer demand.

Because of the cost factors surrounding new all-day express bus routes, the RTA will put regional express bus routes in place incrementally. This will allow initial service levels to build to full service over time (an average of three years). During this time, the RTA will review route ridership as it is established and grows. It will allow bus service resources to be retargeted if a bus route fails to prove reasonably attractive to riders. This retargeting will respect the needs and priorities of subareas from whose budget the service funding is drawn. The incremental approach will allow the RTA to effectively balance the dual goals of offering efficient services and delivering services promised in Sound Move.

Table 15: Regional express bus route forecasts

RTA regional express bus routes	Annual boardings (millions)
A. Everett - Aurora Village	0.4
B. Everett - Mountlake Terrace - Seattle	1.3
C. Everett - Bothell - Bellevue	1.2
D. Lynnwood - Bothell - Bellevue	0.8
E. Woodinville - Northgate	0.5
F. Issaquah - Bellevue - Northgate	1.7
G. Redmond - Bellevue - Seattle	2.2
H. Bellevue - Renton - SeaTac	1.4
I. Redmond - University District	0.5
J. Federal Way - Auburn - Renton - Bellevue	0.7
K. Puyallup - Auburn - Renton - Bellevue	0.7
L. SeaTac - West Seattle - Seattle	1.3
M. Tacoma - Federal Way - SeaTac - Seattle	0.6
N. Tacoma - Seattle	0.6
O. Dupont - Lakewood - Seattle	0.2
P. Tacoma - Auburn	0.1
Q. South Hill - Dupont	0.6
R. Lakewood - Tacoma	0.3
S. Mid-Pierce County - Tacoma	0.2
T. Lakewood - Puyallup	0.5
Total	15.8

Benefits of RTA investments in commuter rail and electric light rail

There are several well-established reasons for the RTA to consider rail as a significant component of a regional transit plan:

- since rail usually travels in its own right-of-way, it offers a high-speed alternative to cars
- trains operating in their own right-of-way are extremely reliable since they are not subject to congestion, accidents, breakdowns or bad weather delays.

Not all of the benefits that urban areas derive from a rail system can simply be stated as some form of "count" or another — such as the number of rail users or, the number of rail riders who would have been in cars had the rail system never been built. Another good measure of the benefits of rail might be the listing of "Preferred Cities for Corporate Relocation" recently published by the Urban Land Institute. The Institute's *Land Use Digest* 2 listed the ten cities receiving the most corporate reallocations for both 1994 and 1995. In both years, nine of the ten cities have either long-established rail systems or new ones undergoing expansion.

Rail boardings

Table 16 shows the estimated rail boardings by line for Sound Move.

With 105,000 boardings, the Seattle-SeaTac light-rail line would carry well over three times the current ridership of Portland's MAX line.

A range of commuter rail ridership is shown. The range is due to a degree of uncertainty that remains regarding the following factors:

- the breakdown between peak- and off-peak direction service, and
- the degree of through-routing of the service between the two lines to the north and south of downtown Seattle.

While the range shown here is for informational purposes, **all the ridership-related numbers used elsewhere in this document (including the measures of productivity) reflect the low end of the range.** The RTA has made use of the "worst case" commuter rail forecasts to ensure that all the estimates and calculations are conservative.

Table 16: Rail station boardings

Line	Daily boardings	Annual boardings
Seattle-SeaTac light-rail line	105,000	32.0 million
Tacoma light-rail line	2,000	0.6 million
Everett-to-Seattle commuter rail*	2,400 - 3,200	0.6 - .8 million
Lakewood-to-Seattle commuter rail*	10,200 - 14,000	2.6 - 3.6 million
Total	119,600 - 124,200	35.8 - 37.0 million

* All calculations of commuter rail productivity use the low end of the range shown.

O&M costs, fare revenue and operating subsidies

Fares

Fare revenue forecasts assume continuing the present transit fares to 2010, with fare increases only matching the inflation rates assumed in the financial plan. Based on the ridership forecasts, the fare revenues upon completion of the ten-year plan would be:

- Light rail = \$20 million/year
- Commuter rail= \$5 -7 million/year
- Regional express bus= \$13 million/year

These annual fare revenues are expressed in constant 1995 dollars.

Net operating cost

The net operating cost subsidy is the annual operating and maintenance (O&M) cost, minus fare revenues.

System efficiency

Table 17 reflects the farebox revenues and O&M costs of the RTA plan by mode.

The farebox recovery ratios (operating revenue per operating expense ratios) shown in **Table 18** exceed those established as minimum acceptable levels by the RTA Board; 40 percent and 20 percent for the rail and bus systems, respectively.

Table 17: Net operating cost

	Annual riders	O&M cost	Fares
Light rail	32.6 M	\$38 M	\$20 M
Commuter rail	3.2-4.4 M	\$21.7 M	\$5- \$7 M
Regional express bus	15.8 M	\$40.5 M	\$13 M

Table 18: Farebox recovery

Light rail	53 %
Commuter rail	23 - 32%
Rail system combined	42 - 45%
Regional express bus routes	32%
System total	38 - 40%

Comparing the capacity of rail systems and highways

Cost effectiveness

Table 19 reflects the annual O&M cost of the RTA ten-year plan per additional rider over the cost of the existing transit system.

O&M cost of the regional express bus system by route

The RTA regional express bus routes would typically operate with limited stops. Most of these routes are different from today's express routes in that they would run quite frequently — every 15-30 minutes during peak periods and every 30-60 minutes during the rest of the day — and would operate in two directions, all day, every day (including week-ends). The total estimated annual ridership on these new routes is 15.8 million boardings. As shown in **Table 18**, the 20 all-day regional express bus routes would have an average farebox recovery ratio of about 32 percent.

For individual routes this recovery ratio would range between 15 percent and 50 percent (this compares to system farebox recovery ratios for the region's four transit operators ranging from 5.6 percent to 23.4 percent according to the Federal Transit Administration report: *1994 Transit Profiles for Agencies in Urbanized Areas Exceeding 200,000 Population*). Comparing route-level forecasts to system-level statistics could easily lead to misleading conclusions because:

Table 19: Annual O&M cost of the system plan per additional rider

Year 2010

Additional passenger trips compared to today's system	42 million
Additional transit boardings compared to today's system	69 million
Cost per additional passenger trip	\$2.40
Cost per additional boarding	\$1.45

- System-level operating revenue per operating expense (OR/OE) ratios typically include more operating revenue than fares alone — for example, advertising revenue. RTA regional express route estimates represent farebox revenues, only. No other operating revenues are included.
- Many reporting methods also omit some operating expenses which the RTA has included (e.g., a 15 percent add-on for ADA supplemental service). These various supporting costs are very often excluded when transit system bus operators present route level information, complicating direct comparisons.

Due to the cost factors surrounding new all-day express routes, the RTA will put the regional express bus routes in place incrementally. This will allow a buildup from initial service levels to full service over time. During this period, the RTA will conduct a systematic review as route ridership is established and grows. **Table 20** presents the annual boardings and O&M costs for the regional express bus system, by route.

Table 20: Regional express bus route forecasts

RTA regional express bus routes	Annual boardings (millions)	Annual O&M cost (millions)
A. Everett - Aurora Village	0.4	\$1.6
B. Everett - Mountlake Terrace - Seattle	1.3	\$2.9
C. Everett - Bothell - Bellevue	1.2	\$1.8
D. Lynnwood - Bothell - Bellevue	0.8	\$1.5
E. Woodinville - Northgate	0.5	\$1.7
F. Issaquah - Bellevue - Northgate	1.7	\$3.7
G. Redmond - Bellevue - Seattle	2.2	\$3.3
H. Bellevue - Renton - SeaTac	1.4	\$3.2
I. Redmond - University District	0.5	\$1.9
J. Federal Way - Auburn - Renton - Bellevue	0.7	\$2.0
K. Puyallup - Auburn - Renton - Bellevue	0.7	\$1.4
L. SeaTac - West Seattle - Seattle	1.3	\$1.3
M. Tacoma - Federal Way - SeaTac	0.6	\$1.2
N. Tacoma - Seattle	0.6	\$4.6
O. Dupont - Lakewood - Seattle	0.2	\$2.8
P. Tacoma - Auburn	0.1	\$0.9
Q. South Hill - Dupont	0.6	\$1.9
R. Lakewood - Tacoma	0.3	\$1.3
S. Mid-Pierce County - Tacoma	0.2	\$0.6
T. Lakewood - Puyallup	0.5	\$0.9
TOTAL	15.8	\$ 40.5

Note: The RTA cost estimates include a 15% add-on for ADA supplemental service.

Highlight:

Among US cities with populations over 1 million, cities with rail systems have transit mode splits — the share of all trips served by transit — 120 percent higher than cities with bus-only transit systems.

Sources: 1990 US Census and Federal Transit Administration Section 15 reports

Comparing the capacity of rail systems and highways

This section provides a consistent, conservative and understandable calculation of capacity for the highways and rails. This is a comparison of practical highway capacities with practical rail capacities. Comparisons are not made of "theoretical" maximum capacities that have not been experienced or sustained, in the case of highways, or might not be achievable, in the case of rail.

Capacity is defined as the highest number of vehicles that can be accommodated by a lane as a stable flow of traffic according to the Transportation Research Board's *Highway Capacity Manual*.

Highway engineers usually describe highway operation in terms of levels of service (LOS), ranging from LOS A to LOS F. LOS F represents "breakdown flow" and is usually referred to as the failed condition. According to the *Highway Capacity Manual*, "the boundary between LOS D and LOS E describes operation at capacity. Operations at this level are extremely unstable. . . . At capacity, the traffic stream has no ability to dissipate even the most minor disruptions. Any incident can be expected to produce a serious breakdown with extensive queuing. . . . Maneuverability within the traffic stream is extremely limited, and the level of physical and psychological comfort afforded to the driver is extremely poor. Average travel speeds at capacity are approximately 30 m.p.h.."

Highlight:

Compared to a peer average (including Tri-Rail, BWI Airport, Northern Indiana, Penn DOT, Staten Island and Caltrain) for commuter rail operating expenses, the RTA commuter rail system will have a 14 percent to 19 percent lower average cost per trip.

The *Highway Capacity Manual* also states that "the LOS E boundary . . . has been generally been found to be the critical density at which capacity most often occurs. This corresponds to . . . a capacity of 2,000 pcphpl [passenger cars per hour per lane] for 60-mph and 70-mph design speeds." Thus, the actual number of vehicles per lane is less than 2,000 per hour if the traffic includes vehicles larger than passenger cars (i.e., trucks).

Using the 2,000 vehicles per hour per lane as the standard for sustainable capacity, the practical person-carrying capacity of a lane can be determined by multiplying the number of vehicles by the average occupancy of a vehicle on the highway.

A survey of western U.S. cities shows that the average vehicle occupancy (AVO) on highways range from around 1.1 persons per vehicle to 1.3. In 1990, Puget Sound area counts showed average vehicle occupancies at 21 locations along the region's highways ranging from 1.05 to 1.24 in the morning and from 1.06 to 1.4 in the afternoon (these counts and the U.S. Census report that average occupancy dropped in the region between 1980 and 1990).

Based on current Puget Sound region information, average vehicle occupancy over an entire day does not appear to exceed 1.25 (give or take a couple hundredths of a person) — though there aren't enough comprehensive counts or surveys to allow a definitive calculation. The state Transportation Department sometimes uses the 1.25 value for highway performance analysis.

Assuming there is an average of 1.25 persons per vehicle, the average person-carrying volume on an average freeway lane is 2,500 people per hour, as shown in **Table 21**.

This translates into a six-lane highway with a practical person-carrying capacity of 15,000 people per hour, or twelve-lanes capable of accommodating 30,000 people per hour.

Table 22: Peak-use rail system capacity

Passengers Per Train		Trains Per Hour		Passengers Per Hour		Two Directions		Passengers Per Hour
750	x	20	=	15,500	x	2	=	30,000

The passenger carrying capacity of a rail system is a function of the number of rail vehicles in a train, the number of passengers carried in each vehicle and the number of trains that operate per hour in each direction.

Table 21: Highway lane capacity

(LOS E capacity per lane)		(Average vehicle occupancy)		(Persons per lane per hour)
2,000	x	1.25	=	2,500

References

The RTA light-rail system will accommodate six-car trains. The capacity of each rail car, including standing passengers, is 125 people (this number is consistent with experience in many U.S. cities and does not exceed vehicle capacity recommended by the Federal Transit Administration for use in federally-supported planning studies). Thus, six-car trains would each be capable of carrying 750 passengers.

With modern signaling, the RTA rail lines will be capable of a peak-use level of service of at least one train every three minutes. This translates into 20 trains per hour, per direction, and yields a peak system capacity as shown in **Table 22**.

A rough comparison, shown in **Table 23**, can then be done between the current capacity of the region's highways and the proposed rail system.

Table 23: Current highway and proposed rail system capacity

Highway				Rail	
Number of highway lanes		Persons per lane	Total highway capacity	Equivalent one direction rail capacity	Equivalent two direction rail capacity
6	x	2,500	= 15,000	15,000	N/A
12	x	2,500	= 30,000	N/A	30,000

Highlights:

A recent Federal Transit Administration study concluded that households in communities with a variety of commercial activities within walking distance of rail stations save an average of \$250 per month in car ownership costs. Nationwide this savings totals \$20 billion per year.

System reliability

Reliability is one measure of a transportation system's performance. It plays an important role in influencing how a person chooses to travel (auto, bus, rail, bicycle, etc.). System reliability basically evaluates how many transit vehicles arrive on time, or within a limited deviation from a published schedule.

System reliability has dropped significantly in the central Puget Sound region's transportation network in the last decade. Single-occupancy vehicles are experiencing a high degree of unreliability because of traffic congestion.

Traffic congestion in the central Puget Sound corridor has increased rapidly in the last ten years, and it now affects travel on most-major freeways, expressways and arterials. Hours of congestion have also increased, with stop-and-go traffic a commonplace experience at midday and on weekends in many places. Traffic congestion is expected to get worse as travel demand continues to rise.

The reliability of public transportation is experiencing a decline similar to general automobile traffic in many corridors where high-occupancy vehicle (HOV) lanes are not available. For example, bus operating speeds on urban arterials in the Seattle have dropped 22-46 percent between 1962 and 1992. Even with HOV lanes, traffic pinch-points have substantially reduced reliability. The three types of transit featured in the RTA ten-year system plan (light rail, commuter rail, and regional express bus routes on HOV lanes) will provide greater reliability than the current public transportation system.

The light-rail system will provide significantly greater reliability than all other types of public transportation in the region. The light-rail system will operate in exclusive rights-of-way (a mix of tunnels, priority surface and aerial alignments).

Since the commuter rail system will run entirely on existing and improved freight railroad tracks — with a high degree of grade separation and fully protected at-grade crossings (with signals, crossing arms, etc.) — it should operate very reliably.

Finally, the regional express bus system will be more reliable than current bus service (though it will be less reliable than the light rail and commuter rail systems because it must still deal with general traffic congestion). These new regional bus services will use HOV lanes wherever available. The RTA will also work closely with local jurisdictions to develop transit priority treatments at critical "pinch points" on regional express bus routes to allow faster and more reliable service.

Overall, Sound Move should offer greater system reliability than is currently available.

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Sound Move

System reliability

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Sound Move – the Regional Transit System Plan

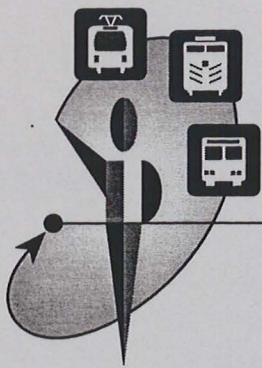
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Sound Move

**Launching a Rapid Transit System
for the Puget Sound Region**

*Appendix D: Sound Move impacts, system
performance and framework for integration
with land-use planning*

*The Ten-Year
Regional Transit
System Plan*

As adopted May 31, 1996

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Environmental, social and economic impacts

Environmental impacts

In 1993, the Joint Regional Policy Committee (JRPC) prepared an environmental impact statement for their Regional Transit System Plan. That document also describes the environmental impacts of the Central Puget Sound Regional Transit Authority's Ten-Year Regional Transit System Plan.

The EIS contains an extensive analysis of environmental impacts, and a description of the relationship between the high-capacity transit system and adopted land-use plans. The EIS also identifies other environmental impacts such as air quality, ecosystems, energy, visual quality, transportation, land use, utilities and parks and recreation. These impacts are described in more detail in technical reports prepared as background for the EIS, particularly *Land use, Growth Management and Station Area Planning* (BRW, 1991).

The EIS describes the relationship between the regional transit system plan and adopted land-use plans. In particular, the EIS discusses how the plan supports regional growth management planning. Successful growth management planning can reduce the automobile use growth rate, create more pedestrian-friendly environments in urban centers, reduce the suburban sprawl growth rate, and preserve open space and environmentally sensitive areas, particularly on the urban fringe.

Although the EIS makes it clear that the regional transit system alone will not be sufficient to bring about these beneficial results, it also makes it clear that an integrated high-capacity transit system is one of the elements critical to successful regional growth management.

Sound Move environmental impacts fall within the range of alternatives and environmental impacts examined in the JRPC environmental analysis. Sound Move is a subset of the JRPC-adopted system plan and is covered by the existing system plan EIS. Because the range of alternatives and impacts of Sound Move are addressed in the JRPC environmental analysis, a supplemental EIS is not required. The RTA adopted the JRPC's EIS as appropriate for Sound Move after independent review.

Since the JRPC issued its EIS in 1993, the Puget Sound Regional Council (PSRC) developed and adopted its Metropolitan Transportation Plan (MTP), and issued an EIS in 1995. The MTP is the region's long range transportation plan, satisfying Intermodal Surface Transportation Efficiency Act (ISTEA) requirements. MTP elements include completing the state Transportation Department's core HOV lane system. Since the information included in the PSRC's MTP environmental analysis is more current and, in some respects, more detailed than the JRPC system plan EIS (it addresses the previously adopted RTA Master Plan, elements of the proposed ten-year plan and long-range vision, and the state Transportation Department HOV lane system for central Puget Sound), the RTA also adopted the MTP EIS.

The state Environmental Policy Act permits agencies to use environmental documents that have been previously prepared to evaluate proposed actions, alternatives or environmental impacts. The proposals may be the same as or different from those analyzed in the existing document. The RTA adopted both the JRPC's System Plan EIS and the PSRC's MTP EIS pursuant to SEPA, and notice of this adoption was issued on May 22, 1996.

Social impacts

The JRPC environmental analysis shows that the most significant social impacts of the plan are increased accessibility for the region's transit-dependent populations in the region. This determination is based on the analysis included in the *Accessibility of Transit-Dependent Populations* report (BRW, 1992). The EIS showed that transit riders' accessibility would be significantly improved by the increased speed and reliability of transit and the increase in service.

Accessibility would increase particularly for the low-income populations of the International District and the Rainier Valley. Transit travel times to employment centers outside Seattle from low income areas in Seattle, Everett, and Tacoma would decrease and more transit would become more reliable. More employment centers would become reasonably and regionally accessible by transit.

The EIS also shows that the regional transit system would be significantly expanded, substantially increasing accessibility for transit-dependent groups such as the elderly and disabled throughout the region. The regional transit system would also reduce automobile dependence for the general population. Refinements to the plan made since the EIS was published will also increase accessibility. These refinements include providing an integrated fare structure.

Other plan social impacts include support for the urban centers developed in VISION 2020 and related county and local government comprehensive plans in the region. While the urban centers concept was developed primarily to reduce traffic congestion and air pollution growth, it also has potentially beneficial social impacts in promoting pedestrian-oriented neighborhoods throughout the region, which in turn will increase social contacts within communities and strengthen community spirit.

Economic impacts

The plan's regional economic impacts described in the JRPC EIS are based primarily on the analysis in the *Rail Construction Employment and Income Impact Assessment* (Parsons/Kaiser, December 1992). This analysis showed a net economic benefit to the region from the inflow of federal funds to build the proposed system.

Response to comments on the EIS indicate that, due to the jobs and income generated during construction, the proposed system would indirectly have a beneficial impact on the tax revenues available to local governments. The increased tax revenue would be reflected indirectly through an increased debt capacity for local governments, as well as through greater capacity to fund projects and programs with cash.

The EIS analysis also indicates that adding people-moving capacity in currently congested urban centers would help to stimulate new development in these areas and could also reduce commercial traffic costs.

Refer to the *Economic benefits, system use and transportation impacts of the RTA ten-year system plan* appendix for information about the economic impacts of the proposed plan.

System performance characteristics

Regional express bus services

Regional express bus services are high-speed routes that operate in both directions throughout the day. These routes would operate primarily on existing, heavily traveled, state and federal Interstate highway corridors using HOV lanes and major arterials with necessary improvements to maintain travel speeds and reliability consistent with Sound Move. These corridors would provide substantially higher passenger capacity, speed and service frequency than existing service. The routes would be provided in corridors without rail service, or in corridors where rail is planned (to help build a strong transit market before the rail line is in place).

When the rail system is extended along corridors served by regional bus, the bus route may be eliminated to avoid duplicating service.

Regional express bus route characteristics:

- serves a major travel corridor directly
- operates all day, every day
- runs frequently, generally with 15 minute, two-way service
- operates at reasonably high speeds, generally averaging 18 to 20 m.p.h. (with stops), using HOV lanes and other systems giving priority to transit such as signal preemption when available
- connects two or more of the designated VISION 2020 urban centers

- crosses city or county boundaries, and carries a significant portion of passengers traveling between jurisdictions
- provides connections to commuter rail, light rail, ferries, other regional express buses, and local service networks.

By providing a link between the regional rail system and local bus service, the regional express bus system will play a key role in helping develop and enhance both regional and local transit markets and providing connections to and between urban and regional activity centers.

Commuter rail

The regional rail system vision includes commuter rail service between Lakewood, Tacoma, Seattle and Everett, that will begin operations within four years of locally committed funding. This service would operate on existing railroad rights-of-way initially using diesel-powered locomotives and two-level commuter cars.

The RTA will work with the railroads, potential bidders, major private sector employers along the proposed route and federal, state and local agencies, to develop a funding package to put the line in place. The RTA will also continue to work in a coalition with the ports, state Transportation Department and other partners to seek additional state and federal funds for the project.

The commuter rail system is expected to include the following general characteristics.

Commuter rail characteristics:

- maximum speed - 79 m.p.h.
- average speed - 35 m.p.h.
- frequency (service will be structured to avoid affecting freight movement):
 - nine trains each peak-use period (morning and evening) between Seattle and Lakewood
 - six trains each peak-use period between Seattle and Everett
- power source - Initially diesel/electric, with ability to convert to alternative fuels or all-electric in future
- train capacity - 3 to 10 car trains with capacity for 450 to 1,500 passengers
- peak-hour, peak direction capacity - 6,000 maximum
- station spacing - About 4 to 5 miles, closer in high employment centers
- right-of-way: railroad tracks shared with freight, signalized grade crossings
- implementation - Implementation of service and related capital investments will be developed along with a procurement process and negotiated agreement.

These characteristics are based on current rail technologies. The RTA will evaluate emerging rail technologies while developing each phasing package.

Electric light rail

The regional rail system technologies will generally have the following design and performance characteristics to achieve the system objectives to the greatest extent feasible.

Electric light-rail characteristics:

- maximum speed — at least 55-65 m.p.h.
- average speed — 25-35 m.p.h.
- frequency — every 6 to 15 minutes.
- power source — electricity
- train capacity — 4-6 car train, at 125/car, or 500-750 passengers
- facility capacity — 22,000 per hour, per direction
- service capacity — 6,000-11,000 per hour, per direction
- station spacing — 1 to 2 miles on average, closer in high transit volume areas
- right-of-way — exclusive grade-separated and surface alignments, separated from traffic, with priority given with signals at grade crossings and intersections.
- alignments — connect directly to centers and maximize pedestrian and transit access.

Framework for integrating regional transit system and land use

Land-use planning that supports transit is critical to the success of the regional transit system. The transit system and local growth management plans are consistent with each other and meet state GMA guidelines. Implementation schedules also require local jurisdiction cooperation. Because local jurisdictions have direct land-use authority, partnerships must be established to make sure that land-use planning efforts and transit service investments support each other.

The RTA's enabling legislation requires the authority to favor cities and counties with supportive land-use plans when implementing its programs. In addition, the RTA is obligated, in cooperation with public and private interests, to promote transit-compatible land uses and development that includes joint development.

A clearly defined process for coordinating land-use planning and regional transit development should be jointly developed by the RTA, the PSRC, the state Transportation Department, counties, local public transportation agencies, and local jurisdictions within the three-county area.

The following three-level structure - Regional, Corridor, and Community - is recommended as a framework for developing this process.

Regional-level coordination

The VISION 2020 growth and transportation strategy and the subsequent adopted Metropolitan Transportation Plan (MTP) provide the broad regional framework to develop the regional transit system plan. Regional guidance needs to continue to make sure that future transit decisions, such as specific station locations and alignments, and future local development decisions, such as station area land-uses and densities, are consistent with VISION 2020, the MTP and other regional plans.

Coordination on the regional level will allow local jurisdictions, the state Transportation Department, PSRC, local transit operators, and the public to work with the RTA to:

- develop a process to preserve right-of-way for regional transit facilities
- establish transit service standards and transit-supportive guidelines for regionally designated centers
- establish regionally consistent policies for land-uses and densities commensurate with the level and type of transit station investment
- monitor the development of the regional transit system and land-use policies to make sure the regional growth and transportation strategy is achieved.

The RTA will work together with the PSRC and local jurisdictions to assess local jurisdictions' progress in meeting the VISION 2020 growth management objectives.

Corridor-level coordination

Corridor-level coordination will be important as the RTA and local jurisdictions work on the more detailed aspects of implementing the regional transit system. Planning will be focused along specific segments of each corridor to evaluate potential transit alignments, station locations, and other transit-related facilities based on guidance established through regional-level coordination

Corridor-level coordination will provide the RTA the opportunity to work closely with counties, local jurisdictions, local communities, public transportation agencies and the state to:

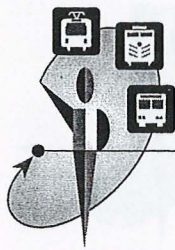
- jointly determine rail station locations and the specific alignments that link rail stations
- establish how priority investments in transit facilities can support jurisdictions that adopt land-use policies that support transit
- define the role of each station based on both local plans and goals and the requirements of regional growth management goals and the regional transit system
- determine the appropriate supporting facilities and services for each station based on its defined role within the corridor.

Corridor-level coordination will ensure that the transit services and local impacts of those services are distributed in a way that is acceptable to the communities along regional transit corridors.

Community-level coordination

Building on regional and corridor-level coordination efforts, community-level planning will enable local jurisdictions to establish an ongoing working relationship with the RTA and local public transportation agencies to:

- evaluate station facility plans for compatibility with local plans to make sure that the station "fits" within the local community
- balance local land-use and transportation planning needs with the regional transit responsibilities of the RTA
- involve local government and citizens in designing rail stations that make attractive and functional additions to the surrounding community
- pursue joint development opportunities at transit facilities and in surrounding areas as appropriate to support increased transit use and community objectives.



Recognizing that different types of station facilities are appropriate for different types of station areas, the RTA will work with local jurisdictions and local transit operators to develop a set of minimum development standards for each type of station facility. These minimum standards will include pedestrian- and transit-friendly design standards, zoning provisions, access and circulation in and around station areas; and should consider at least:

- desired joint development opportunities and densities within station right-of-way
- urban design
- parking policies
- non-motorized access
- motorized access (with HOV priority)
- projected ridership volumes.

These standards will be used by the RTA to help define the characteristics of each station and establish any financial support it might provide to local jurisdictions for station area improvements.

Sound Move — the Ten-Year Regional Transit System Plan

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Information presented in the ten-year
system plan is provided by Sound
Transit to inform citizens and may be
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This information is available in
accessible formats on request at
800-201-4900 or (206) 398-5014 TTY.
Sound Transit information is also
available through the Worldwide Web
at www.soundtransit.org.

